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**CRITICAL AREAS REPORT AND MITIGATION PLAN**

**MILANO ISSAQUAH APARTMENTS**

**ISSAQUAH, WASHINGTON**

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*Prepared For:*  
Milano Issaquah Apartments LLC

*Prepared By:*  
TALASAEA CONSULTANTS, INC.

18 September 2020  
(Revised 24 June 2021)

# **Critical Areas Report and Mitigation Plan**

## **Milano Issaquah Apartments Issaquah, Washington**

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18 September 2020  
(Revised 24 June 2021)

## EXECUTIVE SUMMARY

**PROJECT NAME:** Milano Issaquah Apartments

**CLIENT:** Milano Issaquah Apartments LLC, Mr. Hossein Khorram

**SITE LOCATION:** The Milano Issaquah Apartments property is located at 2300 Newport Way NW in the City of Issaquah, Washington. The property is an irregularly shaped parcel (King County APN 2024069057) approximately 1.33 acres in size. The Public Land Survey System location of the property is the SW ¼ of Section 20, Township 24N, Range 6E, Willamette Meridian.

**PROJECT STAFF:** Bill Shiels, Principal; Ann Olsen, RLA, Senior Project Manager; David Teesdale, PWS, Senior Ecologist; Eva Parker, Senior Landscape Architect.

**FIELD SURVEY:** Talasaea Consultants evaluated the Site on 7 June 2019 and 27 July 2020.

**DETERMINATION:** Talasaea Consultants located one (1) wetland (Wetland B) and one (1) stream (Schneider Creek) on or adjacent to the Milano Issaquah Apartments property. Wetland B is a small (1,737 sf) Category IV wetland located offsite to the northeast which has no buffer requirement due to its small size. Schneider Creek is a Class II stream with salmonids, requiring a 100-foot standard buffer. A single-family residence is located within the standard buffer of Schneider Creek, and the majority of the Schneider Creek buffer is vegetated and maintained as grass lawn associated with the single-family residence.

**VEGETATION:** The majority of the onsite vegetation consists of maintained (mowed) grass lawn. A small portion of the Site is treed with Douglas fir (*Psuedotsuga menziesii*) and other native shrub and tree species.

**HYDROLOGY:** Hydrology for Wetland B is supported, for the most part, by groundwater seeps adjacent to Schneider Creek. Wetland B may receive irregular hydrology input from Schneider Creek at a recurrence interval greater than 2 years.

**SOILS:** Soils in Wetland B consist of mucky loam overlain in some places by silt loam.

**PROJECT DESCRIPTION:** The proposed project is a multi-family residential development consisting of 101 apartment units in one (1) building. The development plan also includes associated utilities, two levels of underbuilding vehicular parking and circulation, internal pedestrian circulation, and public open space. Access to the Site will be provided from Newport Way NW. A gravel trail will be constructed within the building setback line (BSBL) of the Schneider Creek buffer. The existing single-family residential structure located within the standard buffer of Schneider Creek will be removed and restored as functioning buffer. The septic tank, drain field, and possibly a decommissioned fuel tank (if one exists) will also be removed from the buffer of Schneider Creek. Finally, two (2) wooden sheds and a water well will be removed from the areas outside of the Schneider Creek buffer.

**ASSESSMENT OF DEVELOPMENT IMPACTS:** The proposed site plan has been designed to minimize impacts to the critical areas on the Project Site to the extent possible, while still retaining an economically feasible site plan. There will be no direct impacts to Wetland B or Schneider Creek resulting from the proposed site development. However, buffer reduction with enhancement is being proposed for the Schneider Creek buffer, and some minor temporary buffer impacts will result from temporary construction/fire access in the portion of the Site developed with a pre-existing single-family residence. Areas of buffer temporarily impacted will be restored by completion of construction.

**Buffer Reduction:** The Milano Issaquah Apartments development will reduce the standard buffer of Schneider Creek from the standard 100 feet to 75 feet, per Issaquah code allowances. In total, approximately 7,094 sf of the Schneider Creek buffer will be reduced. This portion of the reduced buffer is composed primarily of both maintained grass lawn and a single-family residence. The existing residential use is non-conforming and impacts the functionality of the Schneider Creek buffer.

**Temporary Construction Impacts:** Some minor disturbances will occur within the reduced buffer of Schneider Creek to provide temporary construction and fire access. The location of the proposed access

road is currently comprised of maintained lawn or is developed with the residential structure and driveway. A total of 3,986 sf of Schneider Creek buffer will be temporarily impacted as a requirement to provide access for emergency services and construction vehicles during construction. Currently, there is pedestrian access directly to Schneider Creek from the existing residence. The temporary access road will be constructed in a location that has less impact on the stream than currently exists and the existing access to Schneider Creek will be blocked.

**PROPOSED MITIGATION:** Mitigation for buffer reduction and temporary construction impacts will be provided through enhancement and restoration of the remaining 18,053 sf of reduced buffer area. Mitigation activities can be grouped into four categories:

- 5,256 sf of buffer enhancement (shade tolerant shrub and groundcover plantings) in areas of existing lawn areas under tree canopy;
- 7,048 sf of buffer enhancement (tree, shrub, and groundcover plantings) in areas of existing lawn with no tree canopy;
- 5,130 sf of buffer restoration (decompaction of soils, plantings of trees, shrubs, and groundcovers) in the temporary access and primary residence areas; and
- 619 sf of buffer restoration (decompaction of soils, planting of shade tolerant shrubs and groundcovers) in the temporary access and primary residence areas with existing tree cover.

Temporarily impacted buffer areas, including the existing residence foundation and driveway, will be fully restored following construction. Restoration measures involve soil decompaction and soil amendments, including nine (9) inches of topsoil placement. A variety of native evergreen and deciduous tree, shrub, and groundcover species will then be planted in this area and all bare-soil areas will be amended with three (3) inches of bark mulch. The remaining stream buffer will be enhanced by planting a variety of deciduous and coniferous trees and large shrubs.

The Schneider Creek buffer will be significantly enhanced to provide an improvement in its habitat value over existing conditions. The Schneider Creek buffer on the Site is currently developed with a single-family residence and an associated driveway, and the rest of the buffer is maintained as lawn and devoid of woody vegetation except for a few significant trees located near the existing residence. There is currently very little effective buffer area. This project proposes to enhance the ecological functions within the riparian corridor of Schneider Creek, within the reduced buffer area with native species and remove the existing residence and associated landscapes and hardscapes. The mitigation will result in a substantial gain in ecological functions within this portion of the Schneider Creek riparian area.

**Critical Area Fence and Signs:** The reduced (75-foot) buffer of Schneider Creek will be fenced with split rail fencing to limit encroachments from humans and pets. Critical area signs will be installed along the fence at intervals determined by the City. In addition to the critical areas signs, two (2) interpretive signs will be placed along the buffer to educate pedestrians about the life cycle of salmonid species and the importance of water quality in sustaining these species.

**Long-term Maintenance:** Per IMC 18.10.805 all regulated wetlands and streams located on the property to be developed shall be maintained in perpetuity by the property owner.

**Performance Bond:** Per IMC §18.10.490(D), the applicant shall provide a bond amount equal to 150% of the cost of plants, labor and the 5-year monitoring/maintenance cost prior to final building permit approval.

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**Appendix A:** Wetland Determination Datasheets, Talasaea Consultants, July 2020.

**Appendix B:** Wetland Rating Forms, 2014 Washington State Department of Ecology Wetland Rating System for Western Washington, June 2019.

**Appendix C:** Final Critical Areas Mitigation Plans (Large format 22" x 34")

**Sheet W1.0.** Existing Conditions Plan

**Sheet W1.1.** Proposed Site Plan & Impacts Overview Plan

**Sheet W1.2.** Proposed Site Plan & Mitigation Overview Plan

**Sheet W2.0.** Clearing, Grubbing, and Habitat Feature Plan

**Sheet W3.0.** Conceptual Planting Plan & Candidate Plant List

**Sheet W3.1.** Planting Specifications

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## CHAPTER 1. INTRODUCTION

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### 1.1 Document Purpose

This report is the result of a critical areas investigation for the Milano Issaquah Apartments property located north of Newport Way NW and south of I-90 in Issaquah, Washington (**Figure 1**). Milano Issaquah Apartments property (referred to as “Site” or “Project Site” hereinafter) is the location of a proposed 101-unit apartment development with a recreational facility, public open space, trails, and associated parking.

The purpose of this report is to:

- 1) Identify, categorize and describe existing environmental conditions, such as wetlands, streams, or other critical habitats and their respective buffers located on and adjacent to the Project Site;
- 2) Analyze potential impacts to critical areas resulting from the proposed development; and,
- 3) Describe a mitigation plan to offset impacts to critical areas buffers.

The report has been prepared to comply with the reporting requirements of Issaquah Municipal Code (IMC) §18.10.410. This report will provide and describe the following information:

- General Property Description;
- Methodology for Critical Areas Investigation;
- Results of Critical Areas Background Review and Field Investigations;
- Regulatory Review;
- Description of the Proposed Project;
- Assessment of Project Impacts to Critical Areas;
- Mitigation Sequencing;
- Proposed Mitigation Plan;
- Mitigation Design Elements;
- Site Specific Goals, Objectives, and Performance Standards;
- Construction Sequencing;
- Monitoring Plan;
- Maintenance and Contingency Plan;
- Long-term Maintenance; and
- Performance Bond.

### 1.2 Statement of Accuracy

Stream and wetland characterizations and ratings were conducted by trained professionals at Talasaea Consultants, Inc., and adhered to the protocols, guidelines, and generally accepted industry standards available at the time the work was performed. The conclusions in this report are based on the results of analyses performed by Talasaea Consultants and represent our best professional judgment. To that extent and within the limitation of project scope and budget, we believe the information provided herein is accurate and true to the best of our knowledge.

Talasaea Consultants does not warrant any assumptions or conclusions not expressly made in this report or based on information or analyses other than what is included herein.

### 1.3 Staff Qualifications

Field investigations and evaluations were conducted by David R. Teesdale, PWS, Senior Wetland Ecologist, and Kellen Maloney, Ecologist. David has a Bachelor's Degree in Biology from Grinnell College, Iowa, and a Master's Degree in Ecology from Illinois State University. He has 20 years of experience in wetland delineations and biological evaluations.

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## CHAPTER 2. GENERAL PROPERTY DESCRIPTION AND LAND USE

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### 2.1 Project Location

The Milano Issaquah Apartments property is located at 2300 Newport Way NW in the City of Issaquah, Washington (**Figure 1**). The property is an irregularly shaped parcel (King County APN 2024069057) approximately 1.33 acres in size (**Figure 2**). The Public Land Survey System location of the property is the SW ¼ of Section 20, Township 24N, Range 6E, Willamette Meridian.

### 2.2 General Property Description

The Site is accessed by an existing paved driveway off Newport Way NW that provides access to an existing residence (**Photo 1**). The remainder of the Site is maintained as lawn (**Photo 2**). Schneider Creek is partially located on the southeastern portion of the Site.



**Photo 1. Existing residence and paved driveway.**

Photo is looking northeast. Schneider Creek located on right side of picture.



**Photo 2. Lawn areas associated with residence.**

Photo is looking east.

The Site is bounded to the north by the Revel Issaquah Apartment Complex, to the west and south by Newport Way NW, and to the east by Schneider Creek and the Anthology Apartment Complex.

### CHAPTER 3. METHODOLOGY

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The critical areas analysis of the Site involved a two-part effort. The first part consisted of a preliminary assessment of the Site and the immediate surrounding area using published environmental information. This information included:

- 1) Wetland, soils, and wildlife information from resource agencies;
- 2) Critical areas map information from the City of Issaquah;
- 3) Orthophotography;
- 4) LiDAR terrain data; and,
- 5) Relevant studies completed or ongoing in the vicinity of the Site.

The second part consisted of a Site investigation where direct observations and measurements of existing environmental conditions were made. Observations included plant communities, soils, and hydrology. This information was used to help characterize the existing conditions of the property, and to identify and delineate critical areas (See **Section 4.2 – Field Investigation** below).

#### 3.1 Background Data Reviewed

Background data reviewed included the following sources:

- US Fish and Wildlife Service (USFWS) Wetlands Online Mapper (National Wetlands Inventory (<http://www.fws.gov/wetlands/Data/Mapper.html>);
- Natural Resources Conservation Service (NRCS) Web Soil Survey ([www.websoilsurvey.nrcs.usda.gov/app/](http://www.websoilsurvey.nrcs.usda.gov/app/));
- City of Issaquah Critical Areas Maps and Stream Assessment Documentation;
- City of Issaquah Critical Areas Code;
- King County, Lake Sammamish Kokanee Work Group;
- StreamNet database, 2020 ([www.streamnet.org](http://www.streamnet.org));
- SalmonScape database, 2020 ([www.wdfw.wa.gov/mapping/salmonscape/databases](http://www.wdfw.wa.gov/mapping/salmonscape/databases));
- State of Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database (<http://wdfw.wa.gov/mapping/phs/>);
- Orthophotography from Earth Explorer ([earthexplorer.usgs.gov](http://earthexplorer.usgs.gov)), NETR Online Historic Aerials ([www.historicaerials.com](http://www.historicaerials.com)), and LIDAR information from the Puget Sound LIDAR Consortium ([pugetsoundlidar.ess.washington.edu](http://pugetsoundlidar.ess.washington.edu)).

#### 3.2 Field Investigation

Talasaea Consultants evaluated the Site on 7 June 2019 and 27 July 2020. During these site evaluations, the numbers of plant species present, patterns and characteristics of soils, and presence of hydrologic indicators were noted. Wetlands were identified using the routine methodology described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0* (Environmental Laboratory 2010). Wetlands were rated using the *Washington State Wetland Rating System for Western Washington* (Hruby 2014), and buffers assigned according to Issaquah Municipal Code (IMC) §18.10.620.

Plant species were identified according to the updated taxonomy of Hitchcock and Cronquist (Hitchcock & Cronquist, 2018). Taxonomic names were updated and plant wetland status assigned according to the *North American Digital Flora: National Wetland Plant List, Version 2.4.0* (Lichvar, 2016). Wetland classes were determined with the U.S. Fish and Wildlife Service's system of wetland classification (Cowardin, *et al.* 1979). Vegetation was considered

hydrophytic if greater than 50% of the dominant plant species had a wetland indicator status of facultative or wetter (*i.e.*, facultative, facultative wetland, or obligate wetland).

Wetland hydrology was determined based on the presence of hydrologic indicators listed in the Corps' Regional Supplement. These indicators are separated into Primary Indicators and Secondary Indicators. To confirm the presence of wetland hydrology, one Primary Indicator or two Secondary Indicators must be demonstrated. Indicators of wetland hydrology may include, but are not necessarily limited to: drainage patterns, drift lines, sediment deposition, watermarks, stream gauge data and flood predictions, historical records, visual observation of saturated soils, and visual observation of inundation.

Soils were considered hydric if one or more of the hydric indicators listed in the Corps' Regional Supplement were present. Indicators include presence of organic soils, reduced, depleted, or gleyed soils, or redoximorphic features in association with reduced soils.

An evaluation of patterns of vegetation, soil, and hydrology was made along the interface of wetland and upland. Wetland boundary points were delineated, flagged, and surveyed.

**Appendix A** contains data forms prepared by Talasaea for representative locations in both upland and wetland locations. These data forms document the vegetation, soils, and hydrology information that aided in the wetland boundary determination. Wetlands were classified according to the rating system and criteria contained in the Wetland Rating System for Western Washington (Hruby, 2014). Wetland rating forms are included in **Appendix B**.

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## CHAPTER 4. RESULTS

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### 4.1 Analysis of Existing Information

This section describes the results of our in-house research and field investigations. For the purpose of this report, the terms "vicinity" or "study area" describe an area approximately 300 feet around the Project Site (**Figure 2**).

#### 4.1.1 National Wetlands Inventory (Issaquah Quadrangle)

The USFWS NWI map shows one palustrine scrub-shrub wetland that is seasonally flooded (PSSC) northeast of the Site and one Riverine intermittent, streambed class system (R4SBC) located east of the Site (**Figure 3**).

#### 4.1.2 Natural Resources Conservation Service Soils Data

The NRCS Web Soil Mapper identifies two (2) soil types on the Site (**Figure 4**). These are Kitsap silt loam (partially hydric) and Everett gravelly sandy loam (not hydric).

The Kitsap series is made up of moderately well drained soils that formed in glacial lake deposits, under a cover of conifers and shrubs. These soils are on terraces and strongly dissected terrace fronts. The surface layer and subsoil are very dark brown and dark yellowish-brown silt loam.

Everett gravelly sandy loam is a nearly level to undulating, somewhat excessively drained soil. It forms in gravelly glacial outwash under conifers. The surface is typically very dark brown gravelly sandy loam. The subsoil is dark yellowish-brown gravelly sandy loam.

#### 4.1.3 City of Issaquah Critical Areas Information

The City of Issaquah online GIS viewer does not have any data concerning wetlands within the vicinity of the Site but does show Schneider Creek on the eastern portion of the property (**Figure 5**). Schneider Creek is rated as a City of Issaquah Class 2S (salmonid-bearing) stream. This rating is confirmed by visual sightings of cutthroat trout in the creek by scientists from The Watershed Company (2007) and visual sightings of fish (not identified to genera) by Talasaea Consultants (2013, 2014, and 2015). Schneider Creek also satisfies the criteria as a Type F water under the permanent water typing rule (WAC 222-16-030).

#### 4.1.4 WDFW Priority Habitats and Species

WDFW's Priority Habitat and Species (PHS) online mapping program shows the Site is in the same township (36 square mile area) of a Townsend's big-eared bat (*Corynorhinus townsendii*) communal roost area. Townsend's big-eared bat is a Federal Species of Concern. Townsend's big-eared bats typically roost in caves, mines, hollow trees, and built structures (Woodruff 2005). The nearest mines are remnant coal mine operations located approximately 3 miles away to the south and southwest. No hollow trees were observed on the Site. Townsend's big-eared bats are not known to be present in the built structures onsite.

Townsend's big-eared bat is also a State Candidate for listing. The PHS area for Townsend's big-eared bat is very large and encompasses a 36 square mile area including most of the City of Issaquah and the southern ½ of the City of Sammamish. If discovered, appropriate measures would be taken to exclude bats from the structure prior to demolition. The proposed development will have *no effect* on Townsend's big-eared bat.

The PHS online map also shows one (1) wetland mapped northeast of the Site and extending over the developed areas associated with the Anthology and Revel Apartment complexes. However, the accuracy of this PHS data is questionable due to the illustrated location of the wetland over developed areas.

Schneider Creek is not mapped by PHS and, therefore this database contains no information concerning fish usage of the stream.

#### 4.1.5 King County, Lake Sammamish Kokanee Work Group

The Lake Sammamish Kokanee Work Group identified Schneider Creek in their 2014 report as providing spawning habitat for Lake Sammamish kokanee in an approximately 175-foot reach north of West Lake Sammamish Parkway, approximately 1,800 feet downstream of the Site.

#### 4.1.6 StreamNet and SalmonScape Databases

SalmonScape maps Schneider Creek as an ephemeral or intermittent creek. Schneider Creek is not mapped by StreamNet. Neither service provides information concerning fish usage of Schneider Creek.

### 4.2 Analysis of Existing Site Conditions

Talasaea Consultants identified one (1) wetland (Wetland B) and one (1) stream (Schneider Creek) on or adjacent to the Site (**Sheet W1.0 in Appendix C**). The OHWM for Schneider Creek and the boundary of Wetland B were determined and delineated by Talasaea Consultants. Wetland B was classified according to the rating system and criteria contained in the Wetland Rating System for Western Washington (Hruby, 2014). These onsite features are described in the following sections.

#### 4.2.1 Wetland B

Wetland B is an approximately 1,737 SFsf palustrine forested slope wetland (Cowardin *et al.*, 1979) (Brinson, n.d.) associated with seeps that supply Schneider Creek (**Photo 3**). Wetland B is located entirely offsite and is vegetated with black cottonwood (*Populus balsamifera*), Oregon ash (*Fraxinus latifolia*), red alder (*Alnus rubra*), black twinberry (*Lonicera involucrata*), lady fern (*Athyrium filix-femina*), and red-osier dogwood (*Cornus sericea*).



**Photo 3. Wetland B.**

Photo facing east.

Hydrology for Wetland B is supported, for the most part, by groundwater seeps along the bank of Schneider Creek. However, Schneider Creek may contribute hydrology to the wetland on an irregular basis. Based on channel characteristics, it does not appear that this overbank flooding occurs on a two-year recurrence interval, which would classify Wetland B as a riverine wetland. Soils were saturated at the surface during the June 2019 site visit.

Soils in the wetland were generally composed of a dark brown (10YR 2/1 & 10YR 3/1) mucky loam with areas of silt loam (10YR 2/2 & 10YR 3/3).

Wetland B scored 7 points for Water Quality Functions, 4 points for Hydrologic Functions, and 4 points for Habitat Functions. The Total Score for Functions is 15, which satisfies the criteria for a Category IV wetland under IMC §18.10.620. Category IV wetlands with a Habitat Score of 4 under 2,500 sf in size do not require a buffer per IMC §18.10.620.A.1.e.

#### **4.2.2 Schneider Creek**

Schneider Creek is a small fish-bearing stream located partially on the southeastern portion of the property and offsite to the east. The drainage basin of Schneider Creek is approximately 155 acres in size and is located in the hills southwest of the City limits of Issaquah. The stream originates in a portion of unincorporated King County between SE 60<sup>th</sup> Street and SE 62<sup>nd</sup> Place. It flows through a wooded ravine for approximately 3,000 feet to a 2.5-foot-diameter round concrete culvert under Newport Way NW, which is scheduled to be replaced with a fish-passable culvert by the State of Washington. The outfall of this culvert is perched onsite by approximately two feet and represents a barrier to fish migration (**Photo 4**). From Newport Way NW, the creek flows in a northerly direction to the north property boundary. It exits the property near the northeast corner of the Site. Schneider Creek then flows in a northwesterly direction for approximately 430 feet to a 3.5-foot-diameter corrugated metal culvert under I-90 and West Lake Sammamish Parkway (**Photo 5**). After passing under I-90 and West Lake Sammamish Parkway, Schneider Creek flows in a northwesterly direction for approximately 650 feet to Lake Sammamish.



**Photo 4. Perched culvert at Newport Way NW.**

Photo is looking southwest from the shoulder of Newport Way NW.



**Photo 5. Schneider Creek in I-90 culvert.**

Photo is looking south from the entrance of the culvert under I-90 and West Lake Sammamish Parkway. There appears to be no blockage in the culvert that might preclude or limit migration of fish.

Approximately 95 feet of Schneider Creek flows through the Project Site. The channel width of Schneider Creek in this section is approximately eight feet.

### **Schneider Creek Fish Usage**

The culvert under I-90/West Lake Sammamish Parkway was initially evaluated by Parametrix (2003) as being impassible by fish<sup>1</sup>. Later studies by the Watershed Company (2007)<sup>2</sup> determined that the culvert was likely fish passible. The presence of salmonids was confirmed by the Watershed Company in 2007 through electro-fish sampling. All of the fish caught and identified by the Watershed Company consisted of cutthroat trout (*Oncorhynchus clarkii*). The Watershed Company further posited that the cutthroat trout were not an isolated population and that it was likely that cutthroat trout from the north side of I-90 could easily migrate onto the Site. Finally, the Watershed Company posited the possibility of Coho salmon (*Oncorhynchus kisutch*) also being able to access Schneider Creek on the Site, although no evidence of Coho presence was provided in their report.

We reviewed the existing stream conditions first in 2013 and again in 2015 and noted the presence of fish from the upstream end of the I-90/West Lake Sammamish Parkway culvert upstream to the WSDOT NGPA area. The fish ranged in size from fry to fingerlings (approximately 3 to 5 inches long). We were not able to determine the species of the fish observed, but were able to determine that they were salmonids based on shape and behavior. The fingerlings were likely cutthroat trout and the fry were likely coho salmon.

### **Schneider Creek Classification**

Schneider Creek is identified on the City of Issaquah stream maps as a Class 2S stream (fish-bearing). The Watershed Company (2007) and Talasaea (2013 and 2015) both visually confirmed the presence of fish in the reach of Schneider Creek on the Site. Based on our understanding of IMC §18.10.780, Schneider Creek satisfies the requirements for characterization as a “Class 2 Stream with Salmonids” (presence of cutthroat trout, a salmonid, is presumed). Other salmonids (Coho or Kokanee) may also be able to access the Site. Class 2 Streams with salmonids have a 100-foot standard buffer (IMC §18.10.785(C)). An additional 15-foot building setback is also required from the outer edge of the stream buffer (IMC §18.10.785(F)).

#### **4.2.3 Uplands and Buffers**

Upland vegetation on the Site and in the buffers of Schneider Creek is currently maintained as lawn (**Photo 6**). Some trees are present within the lawn areas, including Douglas fir (*Pseudotsuga menziesii*) and western redcedar (*Thuja plicata*).

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<sup>1</sup> Parametrix. 2003. *Stream Inventory and Habitat Evaluation Report Including Issaquah Creek, East and North Forks of Issaquah Creek, Tibbett's Creek, and the Shoreline of Lake Sammamish*.

<sup>2</sup> The Watershed Company. 2007. *Schneider Creek Stream and Buffer Enhancement Plan*.



**Photo 6. Wetland B buffer on subject property, existing condition.**

Photo is facing west towards small garden area.

#### 4.2.4 Functional Value Analysis of the Schneider Creek Riparian Buffer

There are currently no standard methodologies for assessing buffer function. However, we have extensively reviewed scientific literature on buffers and have developed a qualitative methodology for assessing their functions and services with respect to riparian critical areas. The functions assessed include Shade/Temperature Control, Woody Debris Recruitment, Water Quality Improvement, Hydrologic Functions, and Habitat Value (**Table 1**). Only the onsite portion of the riparian buffer was assessed.

**Table 1. Functional Value Analysis - Existing Buffer Condition**

Function	Shade/ Temperature Regulation	Woody Debris Recruitment	Water Quality Improvement	Hydrologic Functions	Habitat Value
<b>Existing Conditions</b> (Rating & Explanation for Rating)	<b>Moderate Low:</b> The majority of the buffer for the onsite reach of Schneider Creek lacks shrub or tree canopy coverage. The major vegetative coverage is provided by grasses that are frequently mowed. Sparse individual conifer trees are present in some areas.	<b>Low:</b> The major vegetative coverage for Schneider Creek is lawn. There is little opportunity to recruit woody debris onsite. If onsite trees were to fall in the lawn areas, it is likely that they would be removed and not be recruited.	<b>Moderate Low:</b> The majority of the stream buffer is composed of maintained lawn. Fertilizers and/or herbicides may be used to maintain this area of lawn, which would have a negative effect on Water Quality. Also, Newport Way NW is adjacent to the Site and may contribute pollutants that are harmful for fish.	<b>Moderate Low:</b> The buffer for Schneider Creek does not attenuate or slow water velocity of flood waters due to the lawn areas onsite. A well-vegetated buffer would slow water velocities much more than the existing condition.	<b>Low:</b> The only onsite portion of the Schneider Creek buffer that provides habitat is the treed areas of the Site. However, the understory of the treed areas is composed of lawn and the buffer lacks diverse vegetative structure.

### ***Shade and Temperature Regulation***

The shade provided to a stream by a well-vegetated buffer is important for maintaining water temperatures below the life tolerance limits of salmonids, particularly threatened or endangered species of salmon. Research has shown that a 40-foot wide band of trees is able to sufficiently shade streams with flows up to 5 cfm in mid-July. Taller trees or trees on slopes provide even more protection. The existing onsite portion of buffer along Schneider Creek lacks shrub or tree canopy coverage over 75 percent of the total buffer area. We determined that the ability of the existing buffer to provide shading and temperature control within the project area to be **Moderate Low**.

### ***Woody Debris Recruitment***

Recruitment of woody debris is vital to maintaining the health of a stream ecosystem. Woody debris provides structural complexity to the riparian system that, in turn, provides habitat for many species of animals. Aquatic macroinvertebrates will cling to and feed off of the woody debris. Subsequently, these aquatic macroinvertebrates become prey items for fish, birds, and mammals. Additionally, larger pieces of woody debris can modify stream bed conditions and provide spawning and rearing habitat for salmonids. Woody debris can prevent excessive stream bed scouring by reducing the energy of water flow, or it can modify the direction of stream flow by creating new channels.

A majority of the onsite portion of the Schneider Creek riparian buffer currently lacks tree or shrub cover that would supply the stream with a source of woody debris, large or small. Eleven (11) trees are located within the onsite portion of the buffer, but aerial coverage only amounts to 27 percent onsite. The understory vegetation within treed areas is composed entirely of maintained lawn and it is likely that even if these trees were to fall, they would be removed from the buffer to maintain the character of the Site. Overall, we determined that the ability of the existing buffer to provide woody debris recruitment is **Low**.

### ***Water Quality Improvement***

Wetlands are documented as providing water quality functions vital to an ecosystem. However, increased inputs of sediments, nutrients, heavy metals, and toxic organics can quickly overwhelm a functioning wetland and degrade its relative value to the environment and to society. Buffers offer water quality improvement functions that are vital to protecting the health and functioning of wetlands and streams. They do this by “pre-treating” surface water through removal of sediments, nutrients, and sequestration of heavy metals and toxic organics. The factors that provide water quality improvements are the amounts and types of existing buffer vegetation and the width of the buffer, itself. Wide and well-vegetated buffers can retain water over longer periods of time allowing sediments to drop out and sequestration of nutrients, heavy metals, and toxic organics. Wider buffers provide this service at higher levels of efficacy.

The onsite portion of the Schneider Creek buffer is currently maintained as mowed lawn. This grass, even as mowed stubble, will perform some water quality improvements, namely, the removal of sediments. The ability to remove heavy metals, nutrients, and toxic organic compounds is dependent on the residence time of surface water flowing through the buffer and the ability of the various grass species to sequester these pollutants. However, there appears to be no major sources of these pollutants resulting from the residential land use. We determined that the ability of the buffer to perform water quality functions is **Moderate Low**.

### ***Hydrology Functions***

Another important function of buffers is to provide hydrologic support to the wetland or stream through infiltration of water into groundwater.

The onsite portion of the buffer for Schneider Creek is able to provide some limited hydrologic support to the stream. There are few, if any, depressional areas within the existing buffer that

may collect and retain water that could be used to support stream hydrology. We determined that the ability of the existing buffer to provide hydrology functions is **Moderate Low**.

### **Habitat Value**

Between aquatic lands (wetlands, streams, *etc.*) and upland is a dynamic zone that provides considerable habitat potential for a variety of birds, mammals, amphibians, and insects. Plant species diversity, patterns of vegetation, and structural diversity are important in maintaining high levels of habitat potential for wildlife. Dead or dying trees, snags, and down woody material also provide habitat potential within the buffer.

The majority of the onsite portion of buffer for Schneider Creek is comprised of frequently mowed grasses. There is little opportunity for woody species (trees or shrubs) to become established. The buffer contains no habitat features, such as down woody material, snags, stumps, or other similar structures. We determined that the ability of the existing buffer to provide habitat is **Low**.

## **CHAPTER 5. REGULATORY REVIEW**

### **5.1 City of Issaquah Critical Areas Regulations**

Wetland B, Schneider Creek, and their associated buffers are regulated by Chapter 18.10 of IMC. Wetland B was evaluated, rated, and its buffer was determined according to the requirements of IMC §18.10.620. Schneider Creek was classified according to IMC §18.10.780. **Table 2** below provides a regulatory summary of the critical areas on or adjacent to the Site pursuant to IMC Chapter 18.10.

**Table 2. Critical Areas Regulatory Summary**

<b>Critical Area</b>	<b>Cowardin Classification<sup>1</sup></b>	<b>Category<sup>2</sup></b>	<b>Standard Buffer<sup>3</sup></b>
Wetland B 1,737 sf (off-site)	PFO	Category IV	Exempt <sup>4</sup>
Schneider Creek	NA	Class 2 w/Salmonids	100 feet

<sup>1</sup> Based on Cowardin classification system (Cowardin, *et al.* 1979)

<sup>2</sup> Wetlands classified according to IMC 18.10.620 and streams classified according to IMC 18.10.780.

<sup>3</sup> Standard buffer widths according to IMC 18.10.640(C) and IMC 18.10.785(C).

<sup>4</sup> Category IV wetlands under 2,500 sf are exempt from buffer width requirements per IMC 18.10.620.A.1.e.

Development on sites that have wetlands, streams, or associated buffers shall also incorporate where applicable the performance standards provided in §18.10.660, which are listed below:

- A. Direct all lights away from the buffers, and minimize lighting intensity within the vicinity of the wetland buffers;
- B. Minimize noise impacts in the vicinity of the buffers by concentrating open space activities away from the buffers;
- C. Direct toxic runoff from impervious surfaces to stormwater treatment facility, prior to discharge to the buffer;
- D. Discharge treated stormwater to dispersion trenches to prevent channelized flows;
- E. Limit the use of pesticides, insecticides and fertilizer within 150 feet of critical area boundaries; and
- F. Install a split-rail or similar fence at the buffer boundary to prevent human/pet intrusions into the buffers.

The project will implement several of the mitigation measures listed above as follows (**Table 3**):

**Table 3. Summary of Proposed Mitigation Measure 1 Options**

Examples of Disturbances	Measures to Minimize Impacts
<b>Lights</b>	Street and security lighting will be placed so that illumination is directed away from the Wetland B, Schneider Creek, and their associated buffers.
<b>Noise</b>	Planting of dense vegetation specified for mitigation of light-related impacts will also ameliorate impacts due to noise. Commercial compactors and garbage container bays will be located away from the wetland and stream buffer areas, or confined within masonry walls.
<b>Toxic Runoff</b>	Operational covenants will stipulate that no pesticides or herbicides will be used within 150 feet of the wetland or stream buffer (the use of herbicides to control non-native, invasive species in the course of routine mitigation monitoring and maintenance will be allowed as described in <b>Chapters 10 and 12</b> ). Road runoff will be collected and transferred to the project's onsite stormwater treatment and detention facilities. No direct discharge of road runoff or untreated stormwater runoff into the wetlands, streams, or their buffers.
<b>Stormwater runoff</b>	All road runoff will be detained and cleaned by the proposed stormwater system for the project. Treated stormwater runoff is proposed to gravity drain to a birdcage outfall system in the public easement in the Revel Issaquah property, northeast of the Site. Rooftop runoff will be conveyed directly to a dispersion trench located along the south side of the proposed building, outside of the reduced buffer area (see <b>Section 6.2</b> ). No undetained or untreated stormwater will be allowed to flow into the stream or wetlands.
<b>Change in Water Regime</b>	The project proposes a detention facility to mitigate the onsite developed flows. The onsite flows will be over detained to account for the new impervious surfaces. The mitigated runoff from the detention facility will be conveyed to a GULD approved water quality vault for enhanced treatment. This will ensure that the existing water regime is not significantly disrupted by the proposed development.
<b>Pets and Human Disturbances</b>	Buffer areas will be permanently protected by fencing to discourage human and pet intrusions into the buffer, and the buffer areas will be placed in a separate Natural Growth Protection Easement (NGPE), per City requirements.

## 5.2 State and Federal Regulations

Wetlands and streams on the Site are subject to applicable State and Federal regulations. Wetland impacts are regulated at the Federal level by Sections 404 and 401 of the Clean Water Act. The U.S. Army Corps of Engineers (Corps) is responsible for administering compliance with Section 404 via the issuance of Nationwide or Individual Permits for any fill or dredging activities within wetlands under Corps jurisdiction. Any project that is subject to Section 404 permitting is also required to comply with Section 401 Water Quality Certification, which is administered by the Washington State Department of Ecology (WDOE). No direct impacts to wetlands, streams, or other "waters of the U.S." are proposed for the current Site development plan. Therefore, the project will not need to apply for any Section 404 Nationwide or Individual Permits or Section 401 Water Quality Certification.

This also applies to the Washington Department of Fish and Wildlife which issues hydraulic project approvals (HPAs) for projects affecting State waters. Since no direct impacts to streams will occur with the proposed development project, no HPA will be required.

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## CHAPTER 6. PROPOSED DEVELOPMENT

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### 6.1 Project Description

The proposed project is a multi-family residential development consisting of 101 apartment units in one (1) five-story building (**Sheet W1.1 in Appendix C**). The project will also qualify for the *Built Green 5 Star* and *LEED Gold* certifications. The building height will be approximately 65 feet above Newport way and the development plan includes 102 underbuilding parking spaces. A residential lobby is located on the northwestern corner of the building, adjacent to the underbuilding parking area. Access to the Site will be provided by a proposed driveway off of Newport Way NW at the northwestern corner of the property.

A pedestrian trail will be located within the building setback line (BSBL) of the Schneider Creek buffer.

### 6.2 Stormwater Management

Stormwater generated onsite will be detained onsite and processed through a water quality vault for enhanced treatment. Treated stormwater runoff is proposed to gravity drain to a birdcage outfall system in the public easement in the Revel Issaquah property, northeast of the Site. Rooftop runoff will be conveyed directly to a dispersion trench located along the south side of the proposed building, outside of the reduced buffer area. This dispersion trench will support the base flow of Schneider Creek throughout the year. For more information on stormwater, see the Milano Stormwater Approach document prepared by Core Design, Inc. dated April 2020. All stormwater facilities will follow the standards from the 2017 City of Issaquah Addendum to the 2014 Department of Ecology Stormwater Management Manual for Western Washington.

All work adjacent to the Schneider Creek buffer will employ erosion control and water quality protection BMPs per an approved Temporary Erosion and Sedimentation Control plan (TESCP) and Stormwater Pollution Prevention Plan (SWPPP). Please refer to the Final Drainage Report prepared by Core Design, Inc. for more information.

### 6.3 Assessment of Development Impacts

#### 6.3.1 Mitigation Sequencing

Per IMC 18.10.490, mitigation sequencing must be employed on sites containing critical areas to avoid impacting the critical areas to the greatest extent possible, or to minimize impacts if the impacts are unavoidable. The proposed Site plan has been designed to minimize impacts to the critical areas on the project Site to the extent possible while conforming to City of Issaquah requirements and regulations for the *Central Issaquah Development and Design Standards (CIDDs)*. There will be no direct impacts to Wetland B or Schneider Creek resulting from the proposed development. However, buffer reduction is proposed Schneider Creek, and some minor temporary buffer impacts will result from the proposed construction and fire access within the reduced Schneider Creek buffer. The proposed impacts are described in detail in the following sections and are depicted on **Sheet W1.1 in Appendix C**.

#### 6.3.2 Buffer Reduction

A minimum developable area is required in order to accommodate all the required project elements, including buildings, parking, utilities, and open space. The economic feasibility of the project will require that the buffer of Schneider Creek be reduced according to the standard allowances described within IMC §18.10.790.D(4).

Pursuant to IMC §18.10.790.D(4).b (*stream buffer reduction with vegetation enhancement*), buffer reduction is allowed if it meets certain requirements. These requirements are listed below, followed by a description (in italics) of how the proposed buffer averaging meets each requirement.

- a. More than forty (40) percent of the buffer area is covered by nonnative and/or invasive plant species;

*The total onsite area encumbered by the Schneider Creek buffer is approximately 26,176 sf. Approximately 13,220 sf, or 51%, of the onsite portion of the Schneider Creek buffer is comprised of nonnative grass species associated with the maintained lawn area. Additionally, 4,829 sf, or 18%, of the onsite buffer currently developed with an existing residential development and associated paved driveway. In total, 69% of the onsite buffer area of Schneider Creek is composed of nonnative species or existing development to be removed.*

- b. Tree and/or shrub vegetation cover less than twenty-five (25) percent of the buffer area; and

*Tree and shrub vegetation comprise approximately 6,976 sf or 27% of the onsite buffer area. Measurements of tree canopy area were determined based on the canopy dripline approximated from aerial imagery. However, the sub-canopy vegetation stratum below the tree canopy is comprised only of lawn grass. Thus, vegetative structure is lacking in all strata except for the trees. We suggest that sub-canopy strata are taken into consideration, and the onsite tree canopy areas should be given a  $\frac{3}{4}$  credit ratio for aerial coverage. Therefore, the treed area would comprise approximately 20%, meeting the criteria of this section.*

- c. The stream buffer has slopes of less than twenty-five (25) percent.

*The average slope within the Schneider Creek stream buffer is approximately 10% based on surveyed topography.*

The Milano Issaquah Apartments development will reduce approximately 7,094 sf of the buffer for Schneider Creek to accommodate the proposed site plan. The remaining, approximately 18,053 sf of the Schneider Creek buffer will be restored with native plantings. The 25-foot-wide area of buffer reduction will be developed primarily with low-impact outdoor amenity space and the remaining buffer area will be completely closed off to pedestrians or pets, through critical areas fencing.

### **6.3.3 Temporary Construction Impacts to Buffers**

Minor temporary construction impacts will occur within the reduced buffer of Schneider Creek to provide access for construction equipment and emergency services vehicles to the southern portion of the development. This access will also be used as fire access to the Site during construction. Temporary construction and fire access will be located in the area of the buffer currently developed with an existing residence and driveway to limit soil compaction within the restoration area. A total of 3,986 sf of Schneider Creek buffer will be temporarily impacted during construction. No native vegetation will be disturbed to construct the temporary access, and impacts to vegetation will be limited to lawn areas.

All temporarily disturbed buffer areas on the project Site shall be restored through the decompaction of soils, planting of native trees and shrubs to prevent erosion or re-establishment of invasive species, and provide increased species structure and diversity over existing conditions. In addition, discharge of clean roof runoff will be routed to a dispersion trench located outside of the buffer for Schneider Creek to support buffer hydrology.

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## CHAPTER 7. PROPOSED MITIGATION PLAN

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### 7.1 City of Issaquah Policies and Guidance

The mitigation proposed for critical areas impacts is in accordance with Issaquah Municipal Code, Chapter 18.10, entitled *Environmental Protection*.

### 7.2 Proposed Mitigation

Mitigation for project impacts, including buffer reduction and temporary construction related impacts, will occur as buffer restoration and buffer enhancement. Mitigation areas are depicted on **Sheet W1.1 in Appendix C**. The proposed mitigation measures are described below.

#### 7.2.1 Buffer Restoration

Buffer restoration will occur in the 5,749 sf area where the existing residential development, associated hardscapes, and temporary construction and fire access road are located. This area currently provides minimal buffer functions for Schneider Creek. Prior to restoration, this developed area will be used as a temporary construction and fire access. Restoration activities will first include the demolition of the existing residence and associated hardscapes within the reduced buffer area. After temporary construction access and fire access is no longer required, soils will be de-compacted mechanically before the placement of topsoil and mulch. Plant species selected for introduction into this area include a variety of native woody deciduous and coniferous species (see **Sheet W2.0 – Appendix C**).

The buffer restoration areas are broken out into two distinct areas, characterized by the presence of existing tree canopy. 5,130 sf of proposed buffer restoration area is located outside of any existing tree canopy. This area will be planted with a variety of tree, shrub, and groundcover species. 619 sf of proposed buffer restoration area is located under an existing tree canopy and will be restored with shade-tolerant shrubs and groundcovers. No trees will be planted under the existing tree canopies.

Habitat features, including down logs and stumps will be imported and placed within this area. These features provide shelter for small mammals and the slow decay of woody features contributes nutrients to the buffer area.

#### 7.2.2 Schneider Creek Buffer Enhancement

The Schneider Creek buffer will be significantly enhanced to provide an improved condition over existing conditions. The Schneider Creek buffer is currently devoid of woody vegetation except for the eight (8) existing trees within the reduced buffer area. Large woody debris will be placed in the buffer and will include stumps and down logs to help restore habitat structural diversity. The buffer will be planted with a mix of native evergreen and deciduous species (**Sheets W3.0-3.1 – Appendix C**).

The shade provided by the new vegetation will help maintain cool water temperatures and supply needed cover for any fish within the stream. Additionally, the new stream buffer vegetation will provide organic input necessary for a healthy aquatic macroinvertebrate population, which, in turn, helps support juvenile and adult fish populations. The macroinvertebrate population of a stream is an indicator of general stream health and its ability to support fish, including anadromous fish.

In total, approximately 18,053 sf of currently degraded buffer for Schneider Creek will be enhanced.

### 7.3 Mitigation Design Elements

#### 7.3.1 Habitat Features

Down logs and stumps will be incorporated into the stream buffer mitigation area to provide ecologically important habitat features for wildlife (**Sheet W2.0 – Appendix C**). All down woody

material shall be coniferous species (western red cedar, Douglas fir, western hemlock, or Sitka spruce) obtained from the project Site or imported if necessary.

Down logs and stumps provide the slow release of nutrients as the wood decays, and provides cover for amphibians, small mammals, and other wildlife. Boulders recovered from Site excavation (if available) will be placed in small piles throughout the mitigation area. These piles can provide habitat for reptiles and small mammals.

### 7.3.2 Plantings

A variety of native evergreen and deciduous trees, shrubs, and groundcovers will be used to plant the wetland and buffer areas. A plant schedule is provided on **Sheet W3.0 in Appendix C**. Plant materials will consist of a combination of bare-root and container stock. Plant species were chosen for a variety of qualities, including adaptation to specific water regimes, value to wildlife, value as a physical or visual barrier, pattern of growth (structural diversity), and aesthetic values. Native tree, shrub, and groundcover species were chosen to increase both the structural and species diversity of the mitigation areas, thereby increasing the value of the mitigation areas to wildlife for food and cover. Planting will be planned to occur during the dormant season (late fall, winter, or early spring) to maximize the chance for successful plant establishment and survival.

### 7.3.3 Temporary Irrigation System

An aboveground temporary irrigation system capable of full head-to-head coverage of all the restored and enhanced buffer areas will be provided. The temporary irrigation system shall either utilize controller and point-of-connection (POC) from the Site irrigation system or shall include a separate POC and controller with a backflow prevention device per water jurisdiction inspection and approval. The system shall be zoned to provide optimal pressure and uniformity of coverage, as well as separation for areas of full sun or shade, and slopes in excess of 5-percent.

The system shall be operation by June 15 (or at time of planting) and winterized by October 1<sup>st</sup>. Irrigation shall be provided for the first 2 years of the monitoring period following installation. The irrigation system shall be programmed to provide ½" of water every three days (one cycle with two start times per week or every three days). A chart describing the location of all installed or open zones and corresponding controller numbers shall be placed inside of the controller and given to the owner's representative. Prior to release of the bond at the end of the City required 5-year monitoring period, all components of the aboveground temporary irrigation system shall be removed from all of the mitigation areas.

## 7.4 Mitigation Goals, Objectives, and Performance Standards

The primary goal of the mitigation project is to replace the functions and values lost through development impacts to the critical area buffers. In order to accomplish this goal, the proposed mitigation plan will accomplish the following:

- Restore 3,986 sf of onsite Schneider Creek stream buffer areas temporarily impacted by construction and fire access.
- Enhance 18,053 sf of the Schneider Creek buffer as mitigation for the 7,094-sf buffer reduction in the project area.

Mitigation actions will be evaluated through the following objectives and performance standards. See **Section 9.3** for a full description of the monitoring methods that will be used to evaluate the approved performance standards. A qualified biologist will perform mitigation monitoring.

### 7.4.1 Goal 1: Schneider Creek Buffer Enhancement Areas & Restored Buffer Areas

**Objective A:** Create structural and plant species diversity in the buffer restoration areas.

**Performance Standard A1:** *At least 15 species of desirable native plants will be present during the monitoring period. Percent survival of planted woody species must be at least 100% at the end of Year 1 (per contactor warranty), and at least 80% for each subsequent year of the monitoring period.*

**Performance Standard A2:** *Total percent aerial woody plant coverage must be at least 45% by Year 4 and 70% by Year 5. Woody coverage may be comprised of both planted and recolonized native species; however, to maintain species diversity, at no time shall a recolonized species (e.g., red alder) comprise more than 20% of the total woody coverage. There must be at least three native species providing at least 20% each, or four native species providing at least 15% each, or five native species providing at least 10% of the total aerial woody plant coverage.*

**Objective B:** Increase the overall habitat functions of these buffer areas by incorporating habitat features (i.e., down logs, stumps, and boulder piles, as appropriate) into the buffers.

**Performance Standard B:** *After construction and for the entirety of the monitoring period, the mitigation areas will contain at least 18 habitat features per acre (1 piece/2,500 sf) including down woody material (logs, stumps, etc.). Down logs shall be a minimum of 18 feet in length and 15" diameter at breast height, with or without roots. Stumps shall be either well-decayed relocated stumps, or cut live rootwads with a minimum of 3 feet of trunk. Stumps will be placed both upright and lying down. Additional habitat features can be placed within the mitigation areas only after specified quantities and sizes have been met.*

**Objective C:** Limit the amount of invasive and exotic species within these mitigation areas.

**Performance Standard C:** *After construction and following every monitoring event for a period of five years, exotic and invasive plant species will be maintained at levels of no more than 15% cover over any 500-sf area within the mitigation areas. These species include Scot's broom, Himalayan and evergreen blackberry, purple loosestrife, hedge bindweed, knotweed sp., and creeping nightshade.*

## 7.5 Functional Value Analysis of the Schneider Creek Buffer

We reassessed the functions of the buffer for Schneider Creek based on anticipated conditions of the mitigation at maturity. These results are summarized on **Table 4**.

The proposed buffer enhancement plan for Schneider Creek will remove non-native invasive species (Himalayan and evergreen blackberry, reed canarygrass, etc.) before planting. The large woody debris will provide terrestrial habitat within the buffer and will help develop a more natural stream buffer habitat.

**Table 4. Functional Value Analysis – Post-mitigation Condition**

Function	Shade/ Temperature Regulation	Woody Debris Recruitment	Water Quality Improvement	Hydrologic Functions	Habitat Value
Existing Conditions	Moderate Low	Low	Moderate Low	Moderate Low	Low

Function	Shade/ Temperature Regulation	Woody Debris Recruitment	Water Quality Improvement	Hydrologic Functions	Habitat Value
Mitigated Conditions	<b>Moderate high to High:</b> The proposed planting of native trees and shrubs will provide greatly improved shading and temperature control in Schneider Creek at maturity.	<b>Moderate high to high:</b> Large woody debris will be incorporated into the mitigated buffer. Additionally, as the trees and shrubs grow and mature, they will naturally support recruitment of woody debris.	<b>Moderate to Moderate High:</b> The mitigated buffer will have the opportunity to provide water quality improvements that the existing buffer does not.	<b>Moderate High:</b> The restored onsite buffer area will provide an increase in Hydrologic functions to Schneider Creek through the infiltration of clean rooftop runoff. The hydroperiod of Schneider Creek will also be extended.	<b>Moderate High to High:</b> Increased plant species diversity, strata, and structural diversity will provide higher habitat value compared to existing conditions.

The buffer will be extensively planted with a variety of native trees and shrubs suitable for use in a riparian buffer area. At maturity, these plants will provide abundant niches for a variety of bird, mammal, and amphibian species, while providing shading and temperature control within Schneider Creek. This shading will help maintain adequate water temperatures for salmonid spawning and rearing.

A more specific discussion of the post-mitigation buffer functions is provided below:

#### ***Shade and Temperature Regulation***

The existing grasses within the onsite portion of the Schneider Creek buffer will be removed and replaced with native trees, shrubs, and groundcovers. Since Schneider Creek is relatively narrow, the shading effect will be quickly achieved during the monitoring period and will improve as the buffer plantings approach maturity. Maintaining shade and cool water temperatures through the Milano Issaquah Apartments property will benefit downstream salmonid resources. We believe that the ability of the post-mitigation buffer to provide shade and temperature regulation will generally increase from the **Moderate Low** rating to a **Moderate to Moderate High** rating at maturity.

#### ***Woody Debris Recruitment***

Installation of large woody debris will instantly address the general lack of any woody debris within the Schneider Creek buffer under existing conditions. As the planted trees and shrubs grow and mature, they will naturally provide additional woody debris in the form of leaves, needles, twigs, branches, and even down logs. We believe that the ability of the post-mitigation buffer to recruit woody debris will generally increase from a **Low** rating to a **Moderate High to High** rating.

#### ***Water Quality Improvements***

We determined that the Schneider Creek buffer under existing conditions would provide moderate levels of water quality improvement. This determination was based partly on the width of the existing vegetated buffer and the lack of development near Schneider Creek. The proposed buffer enhancement plan will improve the species diversity within the buffer and could take advantage of different species abilities to sequester heavy metals, nutrients, and toxic organic compounds. The biggest difference between existing conditions and the post-development mitigated condition is that the buffer post-development will have the opportunity to actually provide water quality improvements. Additionally, the proposed stormwater treatment system will significantly reduce the level of pollutants in stormwater prior to release into the

buffer. We believe that the ability of the post-mitigation buffer to provide water quality improvements will increase from a **Moderate Low** rating to a **Moderate** to **Moderate High** rating.

### ***Hydrologic Functions***

The restored onsite buffer area will provide an increase in Hydrologic functions to Schneider Creek an extended hydroperiod. Following precipitation events, lawn has a poor infiltration rate compared to mature forested areas, which means that less water is able to infiltrate into the groundwater table before evaporating. At maturity, the restored buffer area will provide an increased ability for precipitation to infiltrate into the groundwater table, resulting in a more substantial base flow and longer hydroperiod in Schneider Creek. This means that cool groundwater will be available to support the flows of Schneider Creek into the drier summer months. Additionally, clean rooftop runoff will be directed to a dispersion trench located just outside of the buffer, which will directly support the base flow of Schneider Creek. Therefore, we believe that the ability of the post-mitigation buffer to provide hydrologic functions will increase from **Moderate Low** to **Moderate High**.

### ***Habitat Value***

The habitat value of the existing buffer is severely limited by current maintenance practices (lawn mowing). The proposed buffer enhancement plan will remove all non-native weedy species and will replant with a variety of native trees and shrubs. The buffer will be further enhanced by installation of habitat features (e.g., down logs and stumps). At maturity, the enhanced buffer will provide much greater habitat value to various animal species through increased species diversity, increased habitat features and greater topographic and structural diversity. We believe that the ability of the post-mitigation buffer to provide habitat will increase from the pre-construction **Low** to rating to a **Moderate High** to **High** rating.

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## **CHAPTER 8. CONSTRUCTION MANAGEMENT**

### **8.1 Mitigation Construction Sequencing**

The following provides a general sequence of activities anticipated to be necessary to complete this mitigation project. Some of these activities may be conducted concurrently as the project progresses.

1. Conduct a Site meeting between the contractor, Talasaea Consultants, and the owner's representative to review the project plans.
2. Survey clearing limits, flag and protect vegetation to remain.
3. Verify, using an independent qualified professional, the limits of clearing per the approved Site development plans.
4. Install silt fence and any other erosion and sedimentation control BMPs necessary for work in the critical areas (see civil TESC plans).
5. Construct project per civil plans.
6. Revegetate any cleared area that will remain idle for six or more months (consistent with the TESCP).
7. Clear and grub non-native/invasive vegetation from Schneider Creek buffer.
8. Install habitat features
9. Place mulch within the Schneider Creek buffer area.
10. Complete Site cleanup and install plant material.
11. Install split-rail fence and critical area signs.

### **8.2 Post-Construction Approval**

Talasaea Consultants shall notify the City of Issaquah in writing when the mitigation planting is completed to set up for a final Site inspection and subsequent approval. Once final approval is obtained in writing from the City of Issaquah, the monitoring period will begin.

### 8.3 Post-Construction Assessment

A qualified wetland ecologist/biologist from Talasaea Consultants shall conduct a post-construction assessment after receipt of the post-construction approval from the City of Issaquah. The purpose of this assessment will be to establish baseline conditions at Year 0 of the required monitoring period. A Baseline Assessment Report, which will include as-built drawings, will be submitted to the City. The as-built plan set will depict any field changes to the mitigation plan (planting locations, habitat features, etc.) from the original approved mitigation plan.

## CHAPTER 9. MONITORING PLAN

### 9.1 Monitoring Schedule

Performance monitoring of the mitigation areas will be conducted for a period of five (5) years pursuant to IMC 18.10.500. Monitoring will be conducted according to the schedule presented in **Table 5** below. Monitoring will be performed by a qualified biologist or ecologist.

**Table 5. Projected Schedule for Performance Monitoring and Maintenance Events**

Year	Date	Maintenance Review	Performance Monitoring	Report Due to City
BA <sup>1</sup>	Winter/Spring	X	X	X
1	Spring	X	X	
	Fall	X	X	X
2	Spring	X	X	
	Fall	X	X	X
3	Spring	X		
	Fall	X	X	X
4	Spring	X		
	Fall	X	X	X
5	Spring	X		
	Fall	X	X	X <sup>2</sup>

<sup>1</sup> BA = Baseline Assessment following construction completion.

<sup>2</sup> Obtain final approval from City of Issaquah (presumes performance criteria are met).

### 9.2 Monitoring Reports

Each monitoring report will adhere to applicable City requirements. The reports will include: 1) Project Overview, 2) Requirements, 3) Summary Data, 4) Maps and Plans, and 5) Conclusions. If the performance criteria are met, monitoring for the City will cease at the end of year five, unless objectives are met at an earlier date and the City accepts the mitigation project as successfully completed.

### 9.3 Monitoring Methods for Vegetation Establishment

Vegetation monitoring methods may include counts; photo-points; random sampling; sampling plots, quadrats, or transects; stem density; visual inspection; and/or other methods deemed appropriate by the City. Vegetation monitoring components shall include general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, and invasive weed cover.

Permanent vegetation sampling plots, quadrats, and/or transects will be established at selected locations to adequately sample and represent all of the plant communities within the mitigation project areas. The number, exact size, and location of transects, sampling plots, and quadrats will be determined at the time of the baseline assessment.

Percent areal cover of woody vegetation (forested and/or scrub-shrub plant communities) will be evaluated through the use of point-intercept sampling methodology. Using this methodology, a tape will be extended between two permanent markers at each end of an established transect.

Trees and shrubs intercepted by the tape will be identified, and the intercept distance recorded. Percent cover by species will then be calculated by adding the intercept distances and expressing them as a total proportion of the tape length.

The established vegetation sampling locations will be monitored and compared to the baseline data during each performance monitoring event to aid in determining the success of plant establishment. Percent survival of shrubs and trees will be evaluated in a 10-foot-wide strip along each established transect. The species and location of all shrubs and trees within this area will be recorded at the time of the baseline assessment and will be evaluated during each monitoring event to determine percent survival.

Areas that were cleared or over-cleared and, subsequently, replanted with native trees and shrubs shall be monitored for plant survival for a three-year period. This three-year period will guarantee the successful establishment of native vegetation and the prevention of re-establishment of non-native invasive species.

The wetland buffers and common edges of forested open space shall be monitored for tree blow-downs after clearing and construction for a period of three years. Areas impacted by tree blow-down shall be replanted with native trees at a ratio consistent with the City of Issaquah's Tree Replacement Code (IMC 18.12.1390).

#### **9.4 Photo Documentation**

Locations will be established within the mitigation area from which panoramic photographs will be taken throughout the monitoring period. These photographs will document general appearance and relative changes within the plant community. Review of the photos over time will provide a semi-quantitative representation of success of the planting plan. Vegetation sampling transect/plot/quadrat and photo-point locations will be shown on a map and submitted with the baseline assessment report and yearly performance monitoring reports.

#### **9.5 Wildlife**

Birds, mammals, reptiles, amphibians, and invertebrates observed in the wetland and buffer areas (either by direct or indirect means) will be identified and recorded during scheduled monitoring events, and at any other times observations are made. Direct observations include actual sightings, while indirect observations include tracks, scat, nests, song, or other indicative signs. The kinds and locations of the habitat with greatest use by each species will be noted, as will any breeding or nesting activities.

#### **9.6 Water Quality**

Water quality will be assessed qualitatively; unless it is evident there is a serious problem. In such an event, water quality samples will be taken and analyzed in a laboratory for suspected parameters. Qualitative assessments of water quality include:

- oil sheen or other surface films,
- abnormal color or odor of water,
- stressed or dead vegetation or aquatic fauna,
- turbidity, and
- absence of aquatic fauna.

#### **9.7 Site Stability**

Observations will be made of the general stability of soils in the mitigation areas during each monitoring event. Any erosion of soils will be recorded and corrective measures will be taken.

### **CHAPTER 10. MAINTENANCE AND CONTINGENCY**

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Regular maintenance reviews will be performed according to schedule presented in **Table 5** to address any conditions that could jeopardize the success of the mitigation project. Following

maintenance reviews by the biologist or ecologist, required maintenance on the Site will be implemented within 10 business days of submission of a maintenance memo to the maintenance contractor and permittee.

Established performance standards for the project will be compared to the yearly monitoring results to judge the success of the mitigation. If, during the course of the monitoring period, there appears to be a significant problem with achieving the performance standards, the permittee shall work with the City to develop a Contingency Plan in order to get the project back into compliance with the performance standards. Contingency plans can include, but are not limited to, the following actions: additional plant installation, erosion control, modifications to hydrology, and plant substitutions of type, size, quantity, and/or location. If required, a Contingency Plan shall be submitted to the City by December 31<sup>st</sup> of any year when deficiencies are discovered.

The following list includes examples of maintenance (M) and contingency (C) actions that may be implemented during the course of the monitoring period. This list is not intended to be exhaustive, and other actions may be implemented as deemed necessary.

- During year one, replace all dead woody plant material (M).
- Water all plantings at a rate of ½-inch of water every three days between June 15 – October 1st during the first two years after installation, and for the first two years after any replacement plantings (C & M).
- Replace dead plants with the same species or a substitute species that meets the goals and objectives of the mitigation plan, subject to Talasaea and agency approval (C).
- Re-plant area after reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.) (C).
- After consulting with City staff, minor excavations, if deemed to be more beneficial to the existing conditions than currently exists, will be made to correct surface drainage patterns (C).
- Remove/control weedy or exotic invasive plants (e.g., Scot's broom, Himalayan blackberry, purple loosestrife, knotweed sp, hedge bindweed, reed canarygrass, etc.) by manual or chemical means approved by permitting agencies. Use of herbicides or pesticides within the mitigation area would only be implemented if other measures failed or were considered unlikely to be successful and would require prior agency approval. All non-native vegetation must be removed and disposed of off-site. (C & M).
- Weed all trees and shrubs to the dripline and provide 3-inch-deep mulch rings 24 inches in diameter for shrubs and 36 inches in diameter for trees (M).
- Remove trash and other debris from the mitigation areas twice a year (M).
- Selectively prune woody plants at the direction of Talasaea Consultants to meet the mitigation plan's goal and objectives (e.g., thinning and removal of dead or diseased portions of trees/shrubs) (M).
- Repair or replace damaged structures, including signs and fences (M).

## CHAPTER 11. LONG-TERM MAINTENANCE

Per IMC 18.10.805 all regulated wetlands and streams located on the property to be developed shall be maintained in perpetuity by the property owner. The overall Long-Term Maintenance Plan goal is to ensure the protection and viability of the critical areas on the Project Site in perpetuity. Long-term management will include maintenance and monitoring tasks that are intended to ensure the viability of the mitigation areas once the performance standards have been achieved at the end of the five-year required monitoring period. Long-Term Management tasks will include, but are not necessarily limited to, the following:

- Conduct periodic walk-through surveys to qualitatively monitor the general condition of the mitigation areas. Establish reference locations for photographs and prepare a Site map showing the reference locations. Reference photographs will be taken at the select locations during walk-through surveys to document mitigation Site conditions. Document in writing any management or maintenance recommendations or areas of concern during each walk-through survey.
- Monitor and manage non-native invasive species that diminish habitat structure and function within the mitigation Site. If necessary, develop and implement specific control actions. These may include, but are not limited to, spot weeding and selective herbicide application.
- Monitor the condition of gates, fencing, and signs around the perimeter of the mitigation areas, and repair and/or replace as necessary to deter human intrusion into the mitigation areas.
- Monitor and maintain vegetative barriers around mitigation areas. Vegetated areas along the perimeter of the mitigation areas, installed in order to deter human intrusion, shall be maintained as a dense barrier of continuous woody vegetation so that they continue to provide this function. Replace plants as necessary with the same species or a suitable substitute of native species.
- Clean up trash and debris and repair or rectify damage caused by trespassing or vandalism. Improve management or security measures if necessary, to help prevent future instances of vandalism or trespassing.

The property owner will be responsible for implementing the above tasks in perpetuity in the mitigation areas.

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## **CHAPTER 12. PERFORMANCE BOND**

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Per IMC §18.10.490(D), the applicant shall provide a bond amount equal to 150% of the cost of plants, labor and the 5-year monitoring/maintenance cost prior to final building permit approval.

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## **CHAPTER 13. SUMMARY**

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This report is the result of a critical areas investigation for the Milano Issaquah Apartments property located in Issaquah, Washington. Talasaea Consultants identified one (1) wetland (Wetland B) and one (1) stream (Schneider Creek) on or adjacent to the Milano property. Wetland B is a 1,737 sf Category IV wetland, exempt from buffer requirements, and Schneider Creek is a Type F fish-bearing water requiring a 100-foot standard buffer and 15-foot building setback.

The Milano Issaquah Apartments property is the location of a proposed 101-unit apartment development with open space, trails, and associated underbuilding parking. The proposed Site plan has been designed to minimize impacts to the critical areas on the project Site to the extent possible while still retaining an economically viable project. There will be no direct impacts to Wetland B or Schneider Creek resulting from the proposed Site development. However, buffer reduction with vegetative enhancement is proposed for Schneider Creek, and some minor temporary buffer impacts will result from temporary construction and fire access in the existing onsite developed footprint.

Mitigation for project impacts resulting from temporary construction related impacts buffer reduction will occur as buffer restoration and buffer enhancement. The project will have an overall net benefit to critical areas functions.

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**CHAPTER 14. REFERENCES**

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- Cowardin, L., Carter, V., Golet, F., & LaRoe, E. (1979). *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service, Department of the Interior.
- Environmental Laboratory. (2010). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. U.S. Army Corps of Engineers Wetlands Regulatory Assistance Program.
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- Hruby, T. (2014). *Washington State Wetland Rating System for Western Washington - Revised*. Olympia, WA: Washington State Department of Ecology Publication #04-06-029.
- Lichvar, R. (2016). *National Wetland Plant List*. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory.
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- Washington State Department of Ecology. (2012). *Stormwater Management Manual for Western Washington*.
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- Woodruff, K. a. (2005). *Townsend's Big-eared Bat (Corynorhinus townsendii)*. Washington Department of Fish and Wildlife.

## FIGURES

- Figure 1:** Vicinity Map & Driving Directions
- Figure 2:** Parcel Map
- Figure 3:** National Wetlands Inventory
- Figure 4:** NRCS Soil Map
- Figure 5:** City of Issaquah GIS
- Figure 6:** Existing Wetland, Stream & Buffers

SW 1/4, SEC. 20, T24N, R6E, W.M.

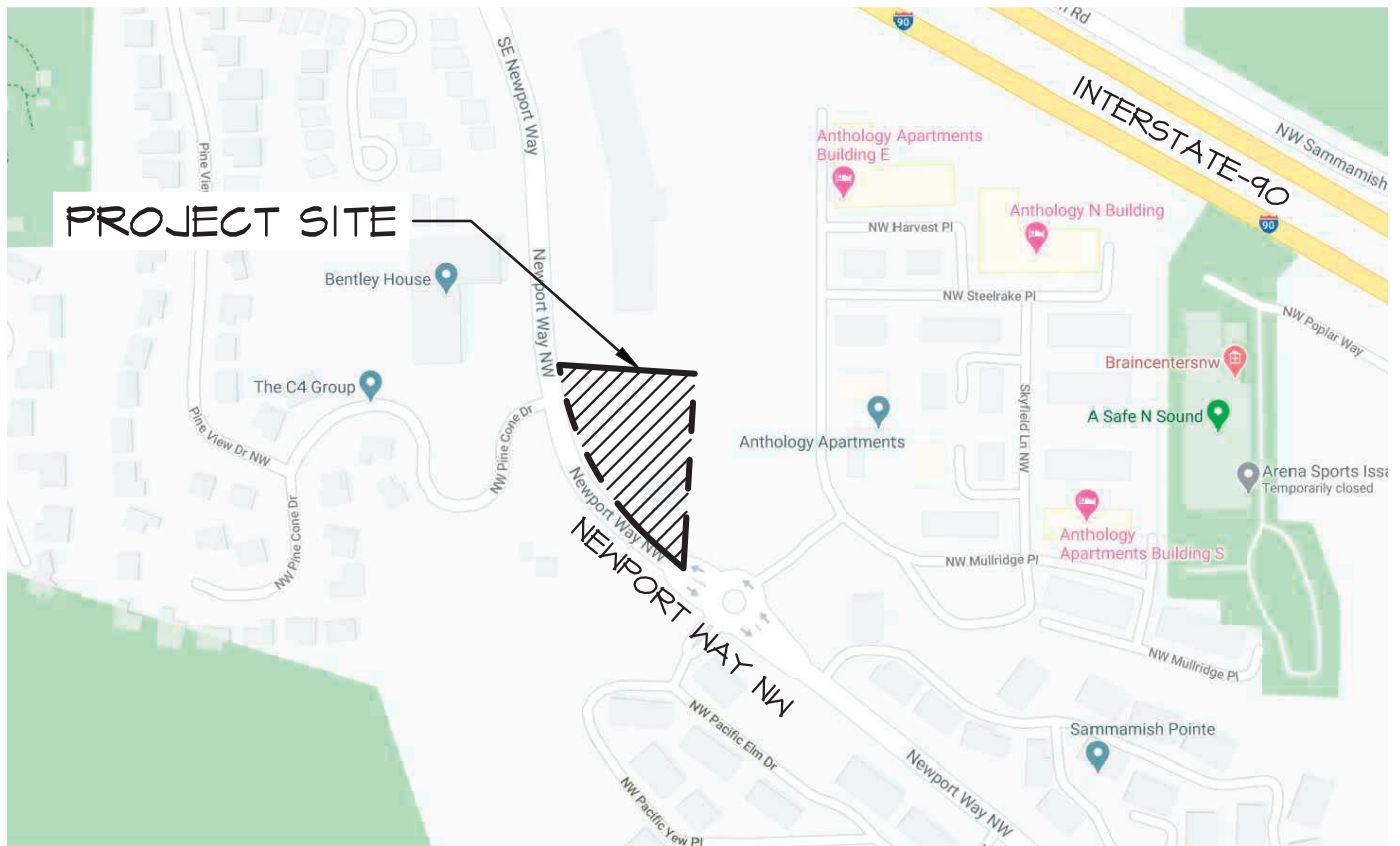


IMAGE SOURCE: GOOGLE MAPS, WWW.MAPS.GOOGLE.COM (ACCESSED 4 MAY 2020)

DRIVING DIRECTIONS:

1. LEAVING FROM ISSAQUAH CITY HALL. HEAD WEST ON EAST SUNSET WAY TOWARD RAINIER BOULEVARD SOUTH.
2. TURN RIGHT ONTO NEWPORT WAY NORTHWEST.
3. TURN LEFT TO STAY ON NEWPORT WAY NORTHWEST.
4. AT THE TRAFFIC CIRCLE, CONTINUE STRAIGHT TO STAY ON NEWPORT WAY NORTHWEST.
5. DESTINATION WILL BE ON THE RIGHT.

2300 NEWPORT WAY NW  
ISSAQUAH, WA 98027



**TALASAEA**  
**CONSULTANTS, INC.**

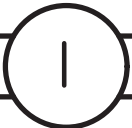
Resource & Environmental Planning

15020 Bear Creek Road Northeast  
Woodinville, Washington 98077  
Bus (425)861-7550 - Fax (425)861-7549

FIGURE #1

VICINITY MAP & DRIVING DIRECTIONS  
MILANO ISSAQUAH APARTMENTS  
ISSAQUAH, WA

DESIGN	DRAWN	PROJECT
	FH	1816
SCALE		
NTS		
DATE		
5-04-2020		
REVISED		
5-19-2021		



SW 1/4, SEC. 20, TWSHP 24N, RGE 6E, W.M.

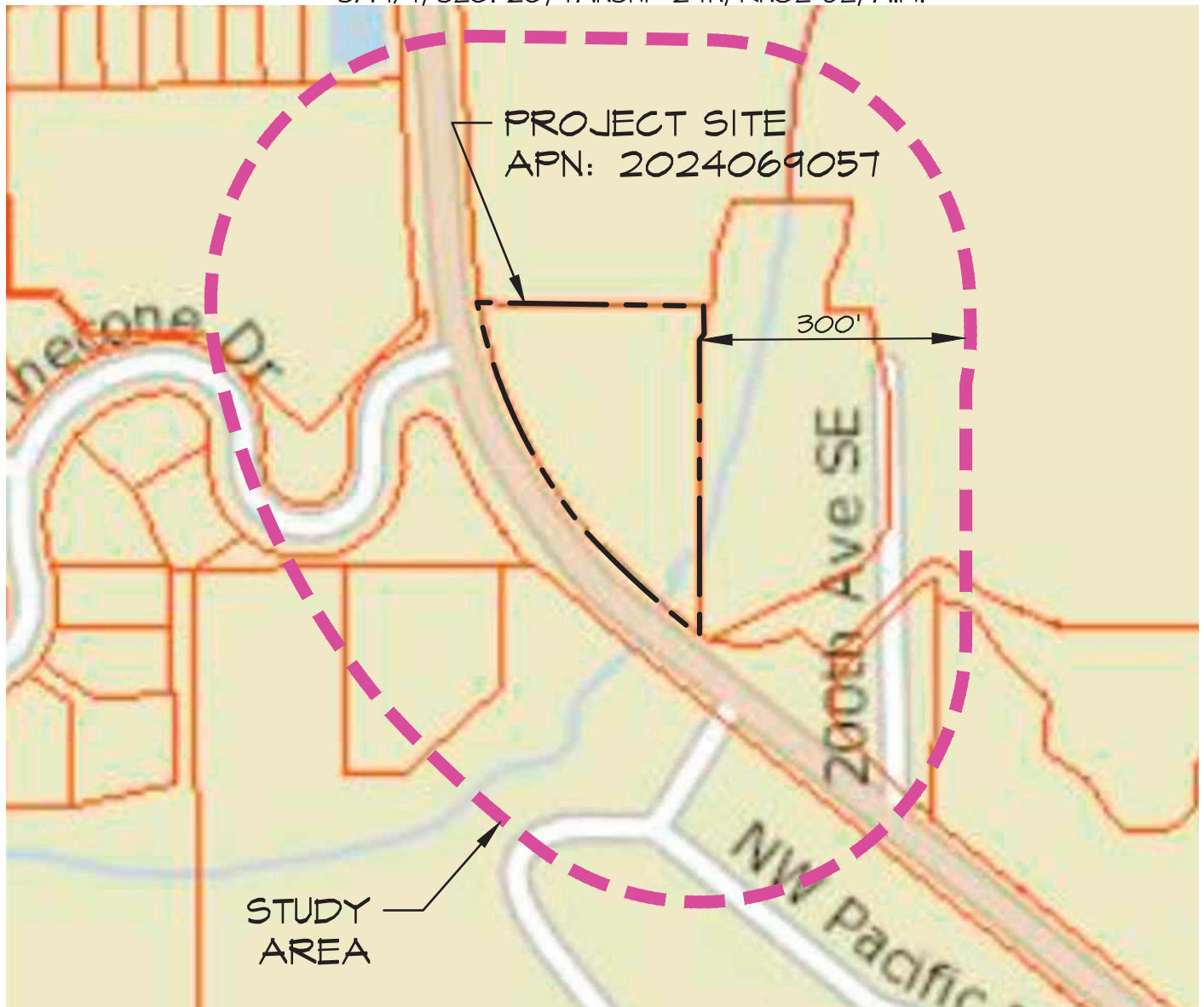


IMAGE SOURCE: KING COUNTY IMAP;  
[HTTP://WWW5.KINGCOUNTY.GOV/IMAP/VIEWER.HTM?MAPSET=KCPROPERTY](http://www5.kingcounty.gov/imap/viewer.htm?mapset=KCPROPERTY)  
 (ACCESSED 4 MAY 2020)



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FIGURE #2

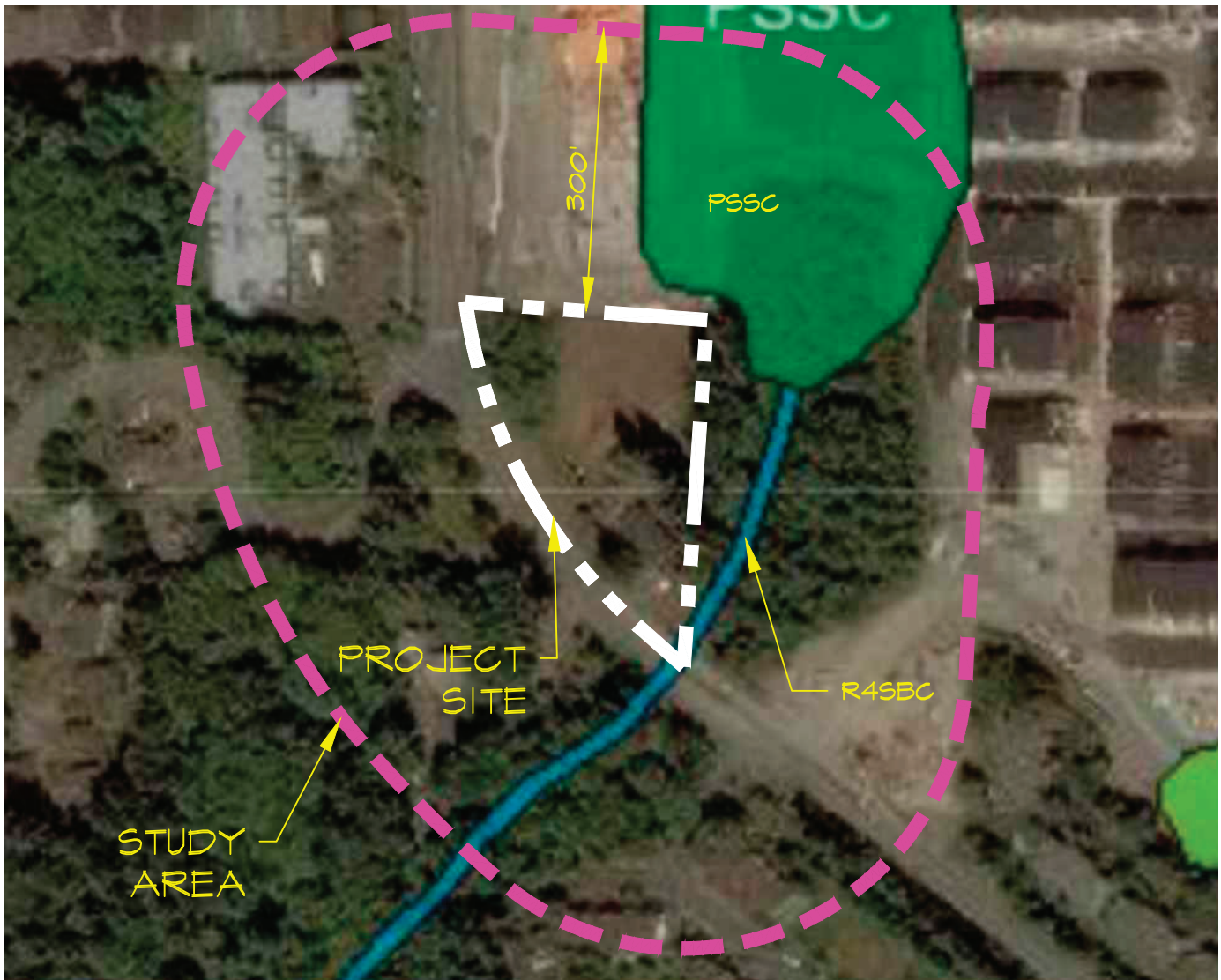
PARCEL MAP  
 MILANO ISSAQUAH APARTMENTS  
 ISSAQUAH, WA

DESIGN	DRAWN	PROJECT
	FH	1816

SCALE
NTS
DATE
5-04-2020
REVISED
5-19-2021

**2**

SW 1/4, SEC. 20, TOWNSHIP 24N, RANGE 6E, W.M.



## LEGEND

TYPE	DESCRIPTION
PSSC	PALUSTRINE, SCRUB-SHRUB, SEASONALLY FLOODED
R4SBC	RIVERINE, INTERMITTENT, STREAMBED, SEASONALLY FLOODED

SOURCE: U.S. FISH AND WILDLIFE SERVICE, MAY 2020). NATIONAL WETLANDS INVENTORY WEBSITE, U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE, WASHINGTON D.C.  
<http://www.fws.gov/wetlands/data/wetland-codes.html>



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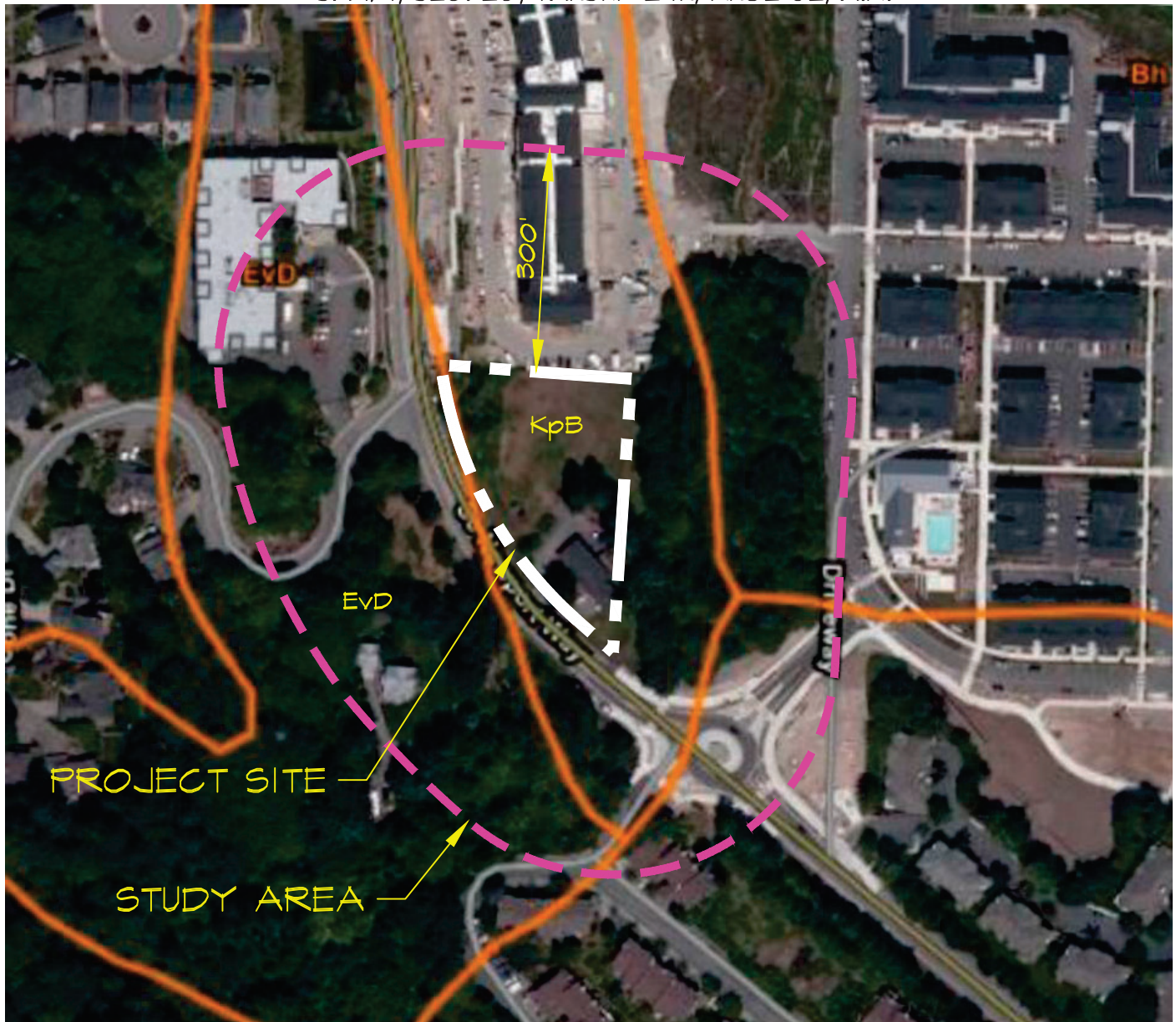
FIGURE #3

NATIONAL WETLANDS INVENTORY  
 MILANO ISSAQUAH APARTMENTS  
 ISSAQUAH, WA

DESIGN	DRAWN	PROJECT
	FH	1816
SCALE		
NTS		
DATE		
5-04-2020		
REVISED		
5-19-2021		

3

SW 1/4, SEC. 20, TOWNSHIP 24N, RANGE 6E, W.M.



## LEGEND

TYPE	DESCRIPTION, SLOPES
EVD	EVERETT VERY GRAVELLY SANDY LOAM, 15 TO 30 PERCENT SLOPES
KpB	KITSAP SILT LOAM, 2 TO 8 PERCENT SLOPES

SOURCE: SOIL SURVEY STAFF, NATURAL RESOURCES CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE, WEB SOIL SURVEY. AVAILABLE ONLINE AT <http://websoilsurvey.nrcs.usda.gov/>. ACCESSED (MAY 4, 2020).



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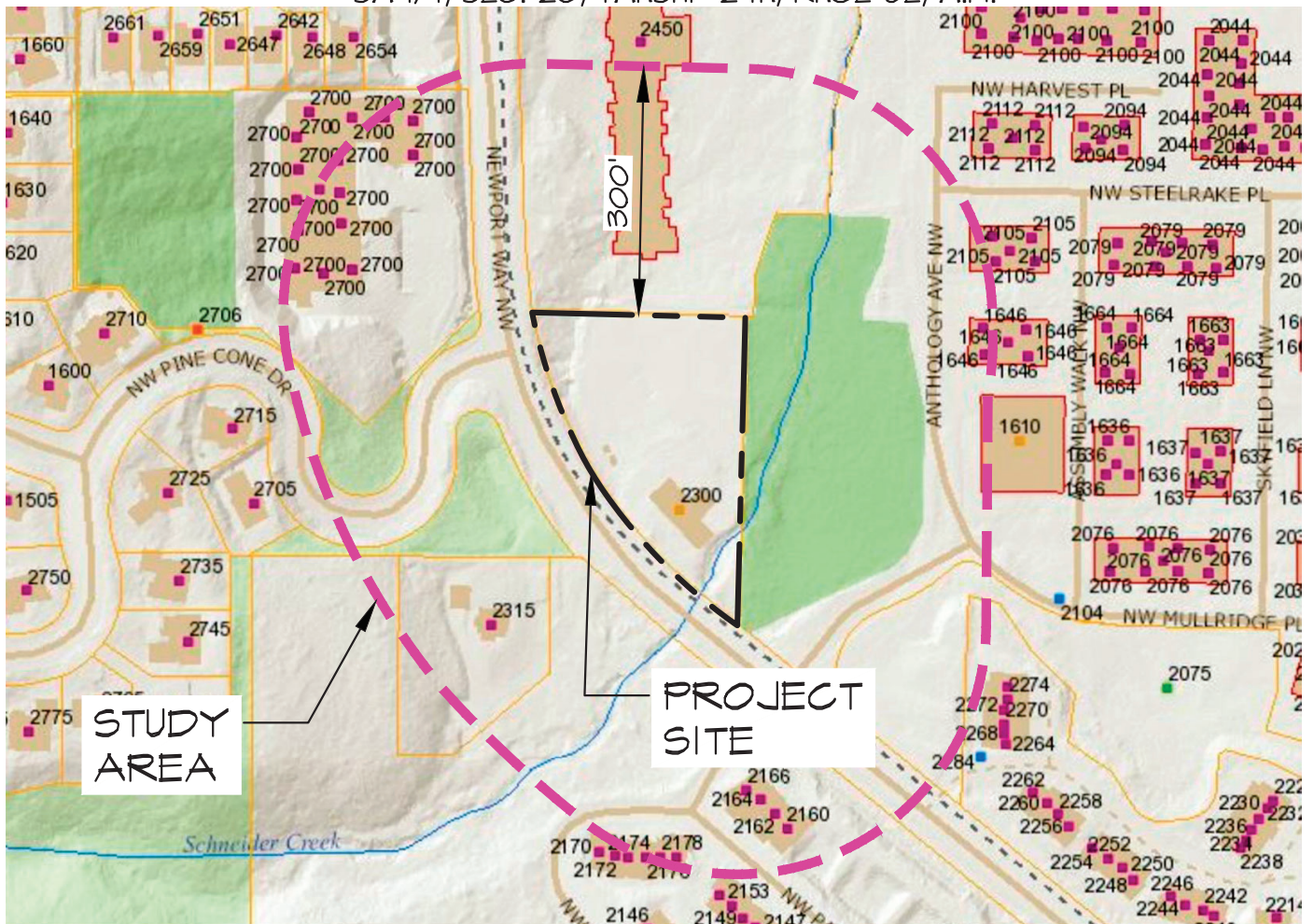
FIGURE #4

NRCS - SOIL MAP  
MILANO ISSAQUAH APARTMENTS  
ISSAQUAH, WA

DESIGN	DRAWN	PROJECT
	FH	1816
SCALE		
NTS		
DATE		
5-04-2020		
REVISED		
5-19-2021		

4

SW 1/4, SEC. 20, T24N, R6E, W.M.



SOURCE: CITY OF ISSAQUAH GIS VIEWER.  
[HTTPS://PRODUCTS.ISSAQUAHWA.GOV/HTML5VIEWERPUBLIC/INDEX.HTML?VIEWER=ISSYPUBLIC](https://products.issaquahwa.gov/html5viewerpublic/index.html?viewer=issypublic). ACCESSED 8-13-2020



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FIGURE #5

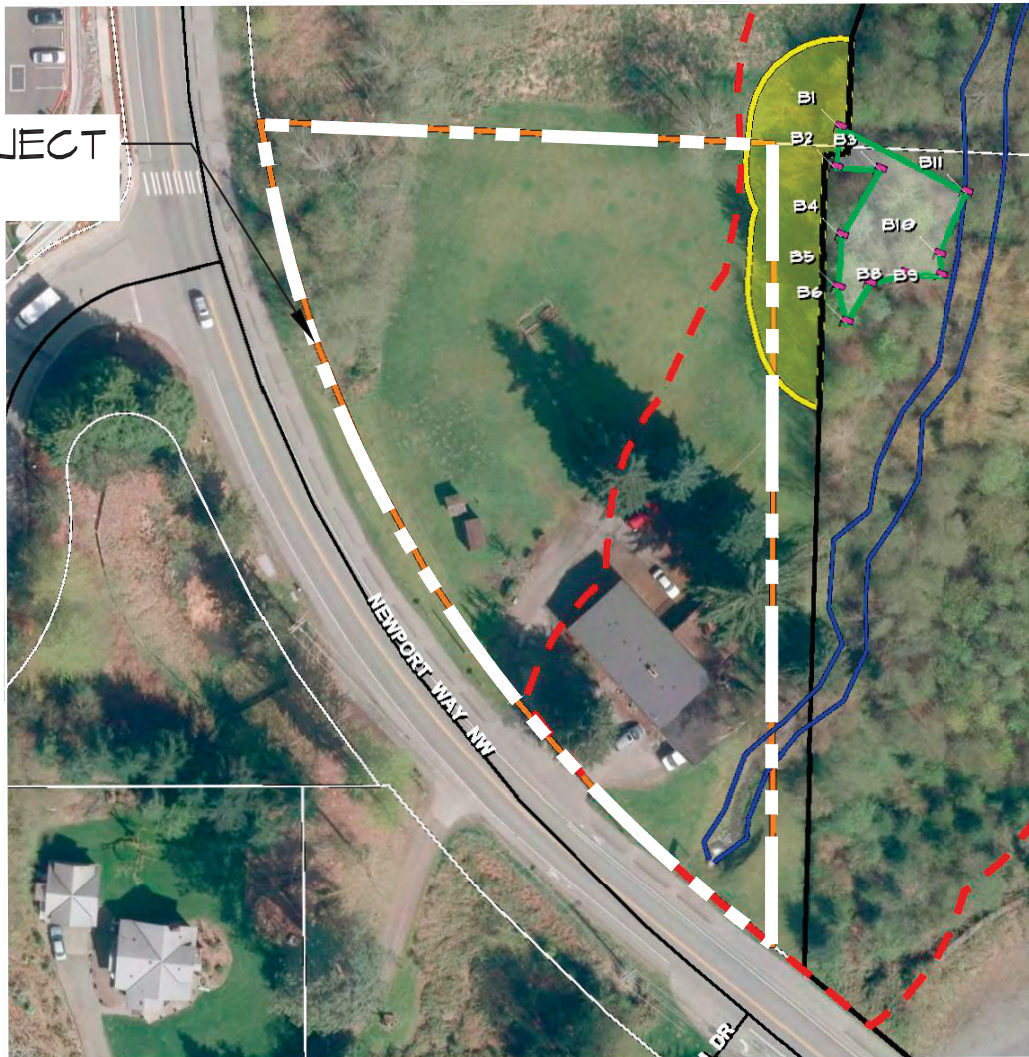
CITY OF ISSAQUAH GIS  
 MILANO ISSAQUAH APARTMENTS  
 ISSAQUAH, WA

DESIGN	DRAWN	PROJECT
	FH	1816
SCALE		
NTS		
DATE		
5-04-2020		
REVISED		
5-19-2021		

5

SW 1/4, SEC. 20, TOWNSHIP 24N, RANGE 6E, W.M.

PROJECT  
SITE



SOURCE: AERIAL IMAGE 2012 FROM EARTH EXPLORER. OHWM AND BUFFER BASED ON SITE SURVEY. WETLAND B BOUNDARY MAPPED USING AN EOS ARROW 100 GPS RECEIVER.

### LEGEND

- WSDOT NGPE BOUNDARY
- 40-FT CAT. IV BUFFER
- WETLAND B
- OHWM SCHNEIDER CREEK
- 100-FT TYPE F STREAM BUFFER



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FIGURE #5

WETLAND & STREAM BUFFERS  
MILANO ISSAQUAH APARTMENTS  
ISSAQUAH, WA

DESIGN	DRAWN	PROJECT
	FH	1816
SCALE		
NTS		
DATE		
5-04-2020		
REVISED		
5-19-2021		

6

## **APPENDIX A**

### **Wetland Determination Datasheets**

Talasaea Consultants,  
July 2020.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: TAL-1816 City/County: Issaquah Sampling Date: 7-27-2020  
 Applicant/Owner: Milano Issaquah Apartments State: WA Sampling Point: TP-1  
 Investigator(s): KM Section, Township, Range: SW 1/4 S20, T24N, R6E, W.M  
 Landform (hillslope, terrace, etc.): Riparian corridor Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): A Lat: 47.551 Long: -122.074 Datum: NAD83  
 Soil Map Unit Name: Kitsap silt loam 2-8% slopes NWI classification: PSSC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation       , Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation       , Soil       , or Hydrology        naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Sample plot located in upland area, approximately 10-feet east of flag B-3.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71</u> (A/B)
1. <u>Salix scouleriana</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Alnus rubra</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>95</u>	<u>      </u>	<u>      </u>	<b>Prevalence Index worksheet:</b> Total % Cover of: <u>      </u> Multiply by: <u>      </u> OBL species <u>      </u> x 1 = <u>      </u> FACW species <u>      </u> x 2 = <u>      </u> FAC species <u>      </u> x 3 = <u>      </u> FACU species <u>      </u> x 4 = <u>      </u> UPL species <u>      </u> x 5 = <u>      </u> Column Totals: <u>      </u> (A) <u>      </u> (B)  Prevalence Index = B/A = <u>      </u>
<u>95</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )				
1. <u>Cornus sericea (alba)</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Symphoricarpos albus</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. <u>Rubus parviflorus</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>75</u> = Total Cover				
Herb Stratum (Plot size: <u>5 ft</u> )				
1. <u>Ranunculus repens</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Equisetum arvense</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
6. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
7. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
8. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>10</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>15 ft</u> )				
1. <u>None</u>	<u>      </u>	<u>      </u>	<u>      </u>	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>90</u> % Cover of Biotic Crust <u>0</u>				
Remarks: Dominance test passed. Hydrophytic vegetation criteria met. However, two dominant FACU shrub species are present, which indicates that Hydrophytic vegetation is borderline.				

# SOIL

Sampling Point: TP-1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 2/2	100	-	-	-	-	SLo	
7-16	10YR 3/2	100	-	-	-	-	SLo	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                                  |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                              |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1 ( <b>except MLRA 1</b> )) |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                              |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                           |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Depleted Dark Surface (F7)                        |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox Depressions (F8)                            |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Compact gravel

Depth (inches): 16+

**Hydric Soil Present?** Yes ☐ No ☒

Remarks: Hydric soil criteria not met. No indication of redoximorphic features within soil strata.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1)(**LRR A**)
- ☐ Other (Explain in Remarks)
- ☐ Water Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6)(**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indication of wetland hydrology.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: TAL-1816 City/County: Issaquah Sampling Date: 7-27-2020  
 Applicant/Owner: Milano Issaquah Apartments State: WA Sampling Point: TP-2  
 Investigator(s): KM Section, Township, Range: SW 1/4 S20, T24N, R6E, W.M  
 Landform (hillslope, terrace, etc.): Riparian corridor Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): A Lat: 47.551 Long: -122.074 Datum: NAD83  
 Soil Map Unit Name: Kitsap silt loam 2-8% slopes NWI classification: PSSC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation       , Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation       , Soil       , or Hydrology        naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: Test plot located within Wetland B, approximately 20 feet west of TP-1.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>Populus balsamifera</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Fraxinus latifolia</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>70</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: <u>      </u> Multiply by: <u>      </u> OBL species <u>      </u> x 1 = <u>      </u> FACW species <u>      </u> x 2 = <u>      </u> FAC species <u>      </u> x 3 = <u>      </u> FACU species <u>      </u> x 4 = <u>      </u> UPL species <u>      </u> x 5 = <u>      </u> Column Totals: <u>      </u> (A) <u>      </u> (B)  Prevalence Index = B/A = <u>      </u>
1. <u>Cornus sericea (alba)</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Physocarpus capitatus</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Equisetum arvense</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>65</u> = Total Cover				
Herb Stratum (Plot size: <u>5 ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Equisetum arvense</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
6. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
7. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
8. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>15</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>15 ft</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>None</u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>85</u>		% Cover of Biotic Crust <u>0</u>		
Remarks: Hydrophytic vegetation criteria met.				

## SOIL

Sampling Point: TP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR 2/2	100	-	-	-	-	SiLo		
6-20	10YR 3/1	95	10YR 3/4	5	PL, C	M	Lo		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1 ( <b>except MLRA 1</b> )) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)  <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
---	--

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks: Pore linings and redoximorphic concentrations located within 6-20" layer. Hydric soil criteria met - Redox Dark Surface.

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b>			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> ) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Stunted or Stressed Plants (D1)( <b>LRR A</b> ) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Stained Leaves (B9) ( <b>MLRA 1, 2, 4A, and 4B</b> ) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6)( <b>LRR A</b> ) <input type="checkbox"/> Frost-Heave Hummocks (D7)	

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Three secondary indicators met to meet Wetland Hydrology criteria - Sediment deposits, Surface soil cracks, and stunted plants (buttressed roots).

Project/Site: <u>TAL-1816</u>	City/County: <u>Issaquah</u>	Sampling Date: <u>7-27-2020</u>
Applicant/Owner: <u>Milano Issaquah Apartments</u>	State: <u>WA</u>	Sampling Point: <u>TP-3</u>
Investigator(s): <u>KM</u>	Section, Township, Range: <u>SW 1/4 S20, T24N, R6E, W.M</u>	
Landform (hillslope, terrace, etc.): <u>Riparian corridor</u>	Local relief (concave, convex, none): <u>None</u>	Slope (%): <u>0</u>
Subregion (LRR): <u>A</u>	Lat: <u>47.551</u>	Long: <u>-122.074</u> Datum: <u>NAD83</u>
Soil Map Unit Name: <u>Kitsap silt loam 2-8% slopes</u>	NWI classification: <u>PSSC</u>	

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

Hydrophytic Vegetation Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present?              Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Test plot located within upland area, north of Wetland B.	

Tree Stratum (Plot size: 30 ft)			Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Salix lasiandra</i>		30	Yes	FACW
2.	<i>Thuja plicata</i>		15	Yes	FAC
3.	<i>Alnus rubra</i>		15	Yes	FAC
4.					
			60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)					
1.	<i>Sambucus racemosa</i>		30	Yes	FACU
2.	<i>Ilex aquifolium</i>		15	Yes	FACU
3.	<i>Symphoricarpos albus</i>		15	Yes	FACU
4.					
5.					
			60	= Total Cover	
Herb Stratum (Plot size: 5 ft)					
1.	<i>Hedera helix</i>		25	Yes	FACU
2.	<i>Geranium roberteum</i>		30	Yes	FACU
3.					
4.					
5.					
6.					
7.					
8.					
				= Total Cover	
Woody Vine Stratum (Plot size: 15 ft)					
1.	<i>None</i>				
2.					
			0	= Total Cover	
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust 0 _____					
Remarks: Hydrophytic vegetation criteria not met.					

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_

FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_

FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_

FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_

UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_

Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0<sup>1</sup>

☐ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☐ No ☒

## SOIL

Sampling Point: TP-3

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-9	10YR 2/2	100	-	-	-	-	Lo	
9-20	10YR 3/1	95	10YR 3/4	5	C	M	Lo	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                                  |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                              |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1 ( <b>except MLRA 1</b> )) |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                              |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                           |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Depleted Dark Surface (F7)                        |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox Depressions (F8)                            |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks: Depleted layer (10YR 3/1) with redox concentrations is located too deep in the soil strata to qualify for the F6 hydric soil indicator. Redoximorphic features would have to start within 8 inches of the surface to qualify.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1)(**LRR A**)
- ☐ Other (Explain in Remarks)
- ☐ Water Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6)(**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indication of wetland hydrology.

## **APPENDIX B**

### **Wetland Rating Forms**

2014 Washington State Department of Ecology Wetland Rating System  
for Western Washington, 2014.

Talasaea Consultants,  
June 2019.

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): TAL-1816 Wetland B

Date of site visit: 6/7/19

Rated by Richard T

Trained by Ecology? ☐ Yes ☒ No Date of training

HGM Class used for rating Slope

Wetland has multiple HGM classes? ☐ Y ☒ N

**NOTE: Form is not complete without the figures requested** (*figures can be combined*). Source of base aerial photo/map \_\_\_\_\_

## OVERALL WETLAND CATEGORY IV (based on functions ☒ or special characteristics 1. Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27  
☐ **Category II** – Total score = 20 - 22  
☐ **Category III** – Total score = 16 - 19  
☒ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	M	L	L	
Landscape Potential	M	M	L	
Value	H	L	M	<b>TOTAL</b>
Score Based on Ratings	7	4	4	15

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H  
 8 = H,H,M  
 7 = H,H,L  
 7 = H,M,M  
 6 = H,M,L  
 6 = M,M,M  
 5 = H,L,L  
 5 = M,M,L  
 4 = M,L,L  
 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine <input type="checkbox"/>	I II
Wetland of High Conservation Value <input type="checkbox"/>	I
Bog <input type="checkbox"/>	I
Mature Forest <input type="checkbox"/>	I
Old Growth Forest <input type="checkbox"/>	I
Coastal Lagoon <input type="checkbox"/>	I II
Interdunal <input type="checkbox"/>	I II III IV
None of the above	<input checked="" type="checkbox"/>

**Maps and figures required to answer questions correctly for Western Washington**Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2

☐ YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☒ NO – **Saltwater Tidal Fringe (Estuarine)**

☐ YES – **Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3

☐ YES – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size; \_\_\_At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4

☐ YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks, \_\_\_The water leaves the wetland **without being impounded**.

☐ NO – go to 5

☒ YES – The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6

☐ YES – The wetland class is **Riverine**

**NOTE:** The Riverine unit can contain depressions that are filled with water when the river is not flooding

Wetland name or number Wetland B

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☒ NO – go to 7

☐ YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☒ NO – go to 8

☐ YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number Wetland B

### DEPRESSIONAL AND FLATS WETLANDS

#### Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	0	
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 Wetland has persistent, ungrazed plants > 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0	0	
D 1.4. Characteristics of seasonal ponding or inundation: <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0	0	
Total for D 1	Add the points in the boxes above 0	

**Rating of Site Potential** If score is: ☐ 12-16 = H ☐ 6-11 = M ☐ 0-5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: ☐ 3 or 4 = H ☐ 1 or 2 = M ☐ 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3	Add the points in the boxes above	

**Rating of Value** If score is: ☐ 2-4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b> Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0		0
<b>D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.</b> Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0		0
<b>D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</b> The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5		0
Total for D 4		Add the points in the boxes above

**Rating of Site Potential** If score is: ☐ 12-16 = H ☐ 6-11 = M ☐ 0-5 = L

Record the rating on the first page

<b>D 5.0. Does the landscape have the potential to support hydrologic functions of the site?</b>		
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0		0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0		0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0		0
Total for D 5		Add the points in the boxes above

**Rating of Landscape Potential** If score is: ☐ 3 = H ☐ 1 or 2 = M ☐ 0 = L

Record the rating on the first page

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</b> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): <ul style="list-style-type: none"> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. points = 1</li> </ul> Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0		0
<b>D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b> Yes = 2 No = 0		0
Total for D 6		Add the points in the boxes above

**Rating of Value** If score is: ☐ 2-4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality**R 1.0. Does the site have the potential to improve water quality?**

<b>R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:</b> Depressions cover $>3/4$ area of wetland points = 8 Depressions cover $>1/2$ area of wetland points = 4 Depressions present but cover $<1/2$ area of wetland points = 2 No depressions present points = 0		0
<b>R 1.2. Structure of plants in the wetland (areas with &gt;90% cover at person height, <b>not</b> Cowardin classes)</b> Trees or shrubs $>2/3$ area of the wetland points = 8 Trees or shrubs $>1/3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) $>2/3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) $>1/3$ area of the wetland points = 3 Trees, shrubs, and ungrazed herbaceous $<1/3$ area of the wetland points = 0		0
<b>Total for R 1</b> Add the points in the boxes above		

**Rating of Site Potential** If score is: ☐ 12-16 = H ☐ 6-11 = M ☐ 0-5 = L

Record the rating on the first page

**R 2.0. Does the landscape have the potential to support the water quality function of the site?**

<b>R 2.1. Is the wetland within an incorporated city or within its UGA?</b>	Yes = 2 No = 0	0
<b>R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?</b>	Yes = 1 No = 0	0
<b>R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?</b>	Yes = 1 No = 0	0
<b>R 2.4. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generate pollutants?</b>	Yes = 1 No = 0	0
<b>R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4</b> Other sources _____	Yes = 1 No = 0	0
<b>Total for R 2</b> Add the points in the boxes above		

**Rating of Landscape Potential** If score is: ☐ 3-6 = H ☐ 1 or 2 = M ☐ 0 = L

Record the rating on the first page

**R 3.0. Is the water quality improvement provided by the site valuable to society?**

<b>R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?</b>	Yes = 1 No = 0	0
<b>R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?</b>	Yes = 1 No = 0	0
<b>R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage in which the unit is found)</b>	Yes = 2 No = 0	0
<b>Total for R 3</b> Add the points in the boxes above		

**Rating of Value** If score is: ☐ 2-4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS****Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion**R 4.0. Does the site have the potential to reduce flooding and erosion?**

<b>R 4.1. Characteristics of the overbank storage the wetland provides:</b> <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i> If the ratio is more than 20 points = 9 If the ratio is 10-20 points = 6 If the ratio is 5-<10 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 points = 1	1
<b>R 4.2. Characteristics of plants that slow down water velocities during floods:</b> <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt;90% cover at person height. These are NOT Cowardin classes).</i> Forest or shrub for >1/3 area OR emergent plants > 2/3 area points = 7 Forest or shrub for > 1/10 area OR emergent plants > 1/3 area points = 4 Plants do not meet above criteria points = 0	0
<b>Total for R 4</b> Add the points in the boxes above	

**Rating of Site Potential** If score is: ☐ 12-16 = H ☐ 6-11 = M ☐ 0-5 = L

Record the rating on the first page

**R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?**

<b>R 5.1. Is the stream or river adjacent to the wetland downcut?</b> Yes = 0 No = 1	0
<b>R 5.2. Does the up-gradient watershed include a UGA or incorporated area?</b> Yes = 1 No = 0	0
<b>R 5.3. Is the up-gradient stream or river controlled by dams?</b> Yes = 0 No = 1	0
<b>Total for R 5</b> Add the points in the boxes above	

**Rating of Landscape Potential** If score is: ☐ 3 = H ☐ 1 or 2 = M ☐ 0 = L

Record the rating on the first page

**R 6.0. Are the hydrologic functions provided by the site valuable to society?**

<b>R 6.1. Distance to the nearest areas downstream that have flooding problems?</b> <i>Choose the description that best fits the site.</i> The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	0
<b>R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b> Yes = 2 No = 0	0
<b>Total for R 6</b> Add the points in the boxes above	

**Rating of Value** If score is: ☐ 2-4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

**LAKE FRINGE WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality**L 1.0. Does the site have the potential to improve water quality?**

L 1.1. Average width of plants along the lakeshore ( <i>use polygons of Cowardin classes</i> ):		
Plants are more than 33 ft (10 m) wide	points = 6	0
Plants are more than 16 ft (5 m) wide and <33 ft	points = 3	
Plants are more than 6 ft (2 m) wide and <16 ft	points = 1	
Plants are less than 6 ft wide	points = 0	
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. <i>These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. Herbaceous does not include aquatic bed.</i>		
Cover of herbaceous plants is >90% of the vegetated area	points = 6	0
Cover of herbaceous plants is $>2/3$ of the vegetated area	points = 4	
Cover of herbaceous plants is $>1/3$ of the vegetated area	points = 3	
Other plants that are not aquatic bed $>2/3$ unit	points = 3	
Other plants that are not aquatic bed in $>1/3$ vegetated area	points = 1	
Aquatic bed plants and open water cover $>2/3$ of the unit	points = 0	
Total for L 1	Add the points in the boxes above	

**Rating of Site Potential** If score is: ☐ 8-12 = H ☐ 4-7 = M ☐ 0-3 = L

Record the rating on the first page

<b>L 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
L 2.1. Is the lake used by power boats?	Yes = 1 No = 0	0
L 2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?	Yes = 1 No = 0	0
L 2.3. Does the lake have problems with algal blooms or excessive plant growth such as milfoil?	Yes = 1 No = 0	0
Total for L 2	Add the points in the boxes above	

**Rating of Landscape Potential:** If score is: ☐ 2 or 3 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

<b>L 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0	0
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one aquatic resource in the basin is on the 303(d) list)?	Yes = 1 No = 0	0
L 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the lake or basin in which the unit is found.</i>	Yes = 2 No = 0	0
Total for L 3	Add the points in the boxes above	

**Rating of Value** If score is: ☐ 2-4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

**LAKE FRINGE WETLANDS****Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion

Wetland name or number Wetland B

L 4.0. Does the site have the potential to reduce shoreline erosion?		
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore ( <b>do not</b> include Aquatic bed): <i>Choose the highest scoring description that matches conditions in the wetland.</i>		0
> ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 6	
> ¾ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide	points = 4	
> ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 4	
Plants are at least 6 ft (2 m) wide (any type except Aquatic bed)	points = 2	
Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 0	

**Rating of Site Potential:** If score is: ☐ 6 = M ☐ 0-5 = L *Record the rating on the first page*

L 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0	0
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0	0
Total for L 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: ☐ 2 = H ☐ 1 = M ☐ 0 = L *Record the rating on the first page*

L 6.0. Are the hydrologic functions provided by the site valuable to society?		
L 6.1. Are there resources along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score.		0
There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit	points = 2	
There are nature trails or other paths and recreational activities within 25 ft of OHWM	points = 1	
Other resources that could be impacted by erosion	points = 1	
There are no resources that can be impacted by erosion along the shores of the unit	points = 0	

**Rating of Value:** If score is: ☐ 2 = H ☐ 1 = M ☐ 0 = L *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

**SLOPE WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i> Slope is 1% or less points = 3 Slope is > 1%-2% points = 2 Slope is > 2%-5% points = 1 Slope is greater than 5% points = 0		0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions): Yes = 3 No = 0		0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i> Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = 2 Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0		6
Total for S 1 Add the points in the boxes above		6

**Rating of Site Potential** If score is: ☐ 12 = H ☒ 6-11 = M ☐ 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0		1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ Yes = 1 No = 0		0
Total for S 2 Add the points in the boxes above		1

**Rating of Landscape Potential** If score is: ☒ 1-2 = M ☐ 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0		1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i> Yes = 1 No = 0		1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i> Yes = 2 No = 0		1
Total for S 3 Add the points in the boxes above		4

**Rating of Value** If score is: ☒ 2-4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

**SLOPE WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually  $> 1/8$  in), or dense enough, to remain erect during surface flows.*Dense, uncut, **rigid** plants cover  $> 90\%$  of the area of the wetland

All other conditions

points = 1

points = 0

0

**Rating of Site Potential** If score is: ☐ 1 = M ☒ 0 = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?

Yes = 1 No = 0

1

**Rating of Landscape Potential** If score is: ☒ 1 = M ☐ 0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:

The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)

points = 2

Surface flooding problems are in a sub-basin farther down-gradient

points = 1

No flooding problems anywhere downstream

points = 0

0

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for S 6

Add the points in the boxes above

0

**Rating of Value** If score is: ☐ 2-4 = H ☐ 1 = M ☒ 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

**These questions apply to wetlands of all HGM classes. HABITAT****FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |   |
|--|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | 1 |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |   |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |   |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |   |
| <i>If the unit has a Forested class, check if:</i>   |                                  |   |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon |                                  |   |

**H 1.2. Hydroperiods**

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |                 |
|---|-------------------------------------|-----------------|
| <input type="checkbox"/> Permanently flooded or inundated   | 4 or more types present: points = 3 | 1               |
| <input type="checkbox"/> Seasonally flooded or inundated  | 3 types present: points = 2         |                 |
| <input type="checkbox"/> Occasionally flooded or inundated  | 2 types present: points = 1         |                 |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |                 |
| <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland |                                     |                 |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland                      |                                     |                 |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   |                                     | <b>2 points</b> |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>  |                                     | <b>2 points</b> |

**H 1.3. Richness of plant species**

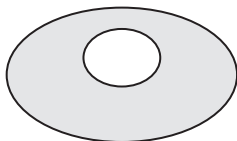
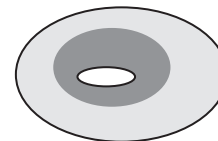
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

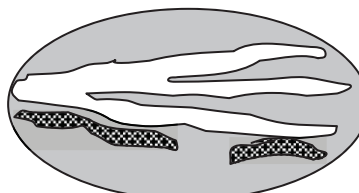
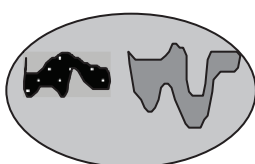
- |                              |            |   |
|------------------------------|------------|---|
| If you counted: > 19 species | points = 2 | 1 |
| 5 - 19 species               | points = 1 |   |
| < 5 species                  | points = 0 |   |

**H 1.4. Interspersion of habitats**

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*

**None** = 0 points**Low** = 1 point**Moderate** = 2 points

All three diagrams in this row are **HIGH** = 3 points



1

Wetland name or number Wetland B

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input checked="" type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	2
<p>Total for H 1</p> <p>Add the points in the boxes above</p>	6

**Rating of Site Potential** If score is: ☐ 15-18 = H ☐ 7-14 = M ☒ 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <math>1 + [(\% \text{ moderate and low intensity land uses}) / 2]</math> <math>0 = 1\%</math></p> <p>If total accessible habitat is:</p> <p>&gt; <math>1/3</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <math>8 + [(\% \text{ moderate and low intensity land uses}) / 2]</math> <math>4 = 12\%</math></p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	-2
<p>Total for H 2</p> <p>Add the points in the boxes above</p>	-1

**Rating of Landscape Potential** If score is: ☐ 4-6 = H ☐ 1-3 = M ☒ < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	1

**Rating of Value** If score is: ☐ 2 = H ☒ 1 = M ☐ 0 = L *Record the rating on the first page*

Wetland name or number Wetland B

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multilayered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number Wetland B

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <span style="float: right;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b>   <input type="checkbox"/> No= <b>Not an estuarine wetland</b></span>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No - Go to <b>SC 1.2</b></span>	No
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ⅓ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <span style="float: right;">Yes = <b>Category I</b>   No = <b>Category II</b></span>	No
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 2.2</b>   <input type="checkbox"/> No – Go to <b>SC 2.3</b></span> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> <span style="float: right;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Not a WHCV</b></span>	No
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input type="checkbox"/> No – Go to <b>SC 3.2</b></span> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <span style="float: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input type="checkbox"/> No = <b>Is not a bog</b></span> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No – Go to <b>SC 3.4</b></span> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <span style="float: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No = <b>Is not a bog</b></span>	No

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i><b>If you answer YES you will still need to rate the wetland based on its functions.</b></i></p> <p><input type="checkbox"/> <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	<p>No</p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes – Go to <b>SC 5.1</b>   <input type="checkbox"/> No = <b>Not a wetland in a coastal lagoon</b></p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</p> <p><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Category II</b></p>	<p>No</p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i><b>If you answer yes you will still need to rate the wetland based on its habitat functions.</b></i> In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes – Go to <b>SC 6.1</b>   <input type="checkbox"/> No = <b>not an interdunal wetland for rating</b></p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?   <input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No – Go to <b>SC 6.2</b></p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?   <input type="checkbox"/> Yes = <b>Category II</b>   <input type="checkbox"/> No – Go to <b>SC 6.3</b></p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?   <input type="checkbox"/> Yes = <b>Category III</b>   <input type="checkbox"/> No = <b>Category IV</b></p>	<p>No</p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p>N/A</p>

Wetland name or number Wetland B

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## **Appendix C**

### **Final Critical Areas Mitigation Plans (Large format 22"x34")**

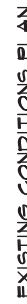
- Sheet W1.0.** Existing Conditions Plan
- Sheet W1.1.** Proposed Site Plan & Impacts Overview Plan
- Sheet W1.2.** Proposed Site Plan & Mitigation Overview Plan
- Sheet W2.0.** Clearing, Grubbing, and Habitat Feature Plan
- Sheet W3.0.** Conceptual Planting Plan & Candidate Plant List
- Sheet W3.1.** Planting Specifications

[illegible]

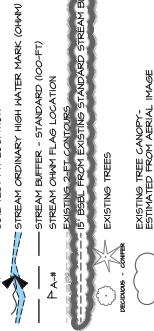
APPLICANT'S NAME:	HOSSEN CHORAM
ADDRESS:	1224 N 9TH STREET BELLEVUE, WA 98005
PHONE:	(425) 465-0375
EMAIL:	HLAND@LANDARTS.COM
NAME:	DAVID TESSELA
ADDRESS:	1000 N 10TH STREET, SUITE 300 SEASIDE, WA 98138
PHONE:	(425) 855-1971
CONTACT:	GLENN SPRAGUE
EMAIL:	GS@GDESIGNING.COM
NAME:	D/ARCH LLC
ADDRESS:	2412 WESTLAKE AVE. N. SEASIDE, WA 98138
PHONE:	(206) 541-1761
CONTACT:	MATT DRESSOLL
EMAIL:	MATTD@ARCHLLC.COM
NAME:	ENVIRONMENTAL CONSULTANT
ADDRESS:	TALASAMA CONSULTANTS, INC. 8020 BEAR CREEK RD. NE MOODYVILLE, WA 98071
PHONE:	IWA PARKER, SENIOR ARCHITECT
CONTACT:	EPARKER@TALASAMA.COM
	DTESSEL@TALASAMA.COM

SHEET NO.	SHEET TITLE
W10	EXISTING CONDITIONS PLAN
W11	PROPOSED SITE PLAN & IMPACTS OVERVIEW PLAN
W12	PROPOSED SITE PLAN & MITIGATION OVERVIEW PLAN
W20	CLEARING, GRUBBING, WEED TREATMENT SPECIFICATIONS & DETAILS
W30	PLANTING PLAN ; PLANT SCHEDULE, NOTES & DETAILS
W31	PLANTING SPECIFICATIONS

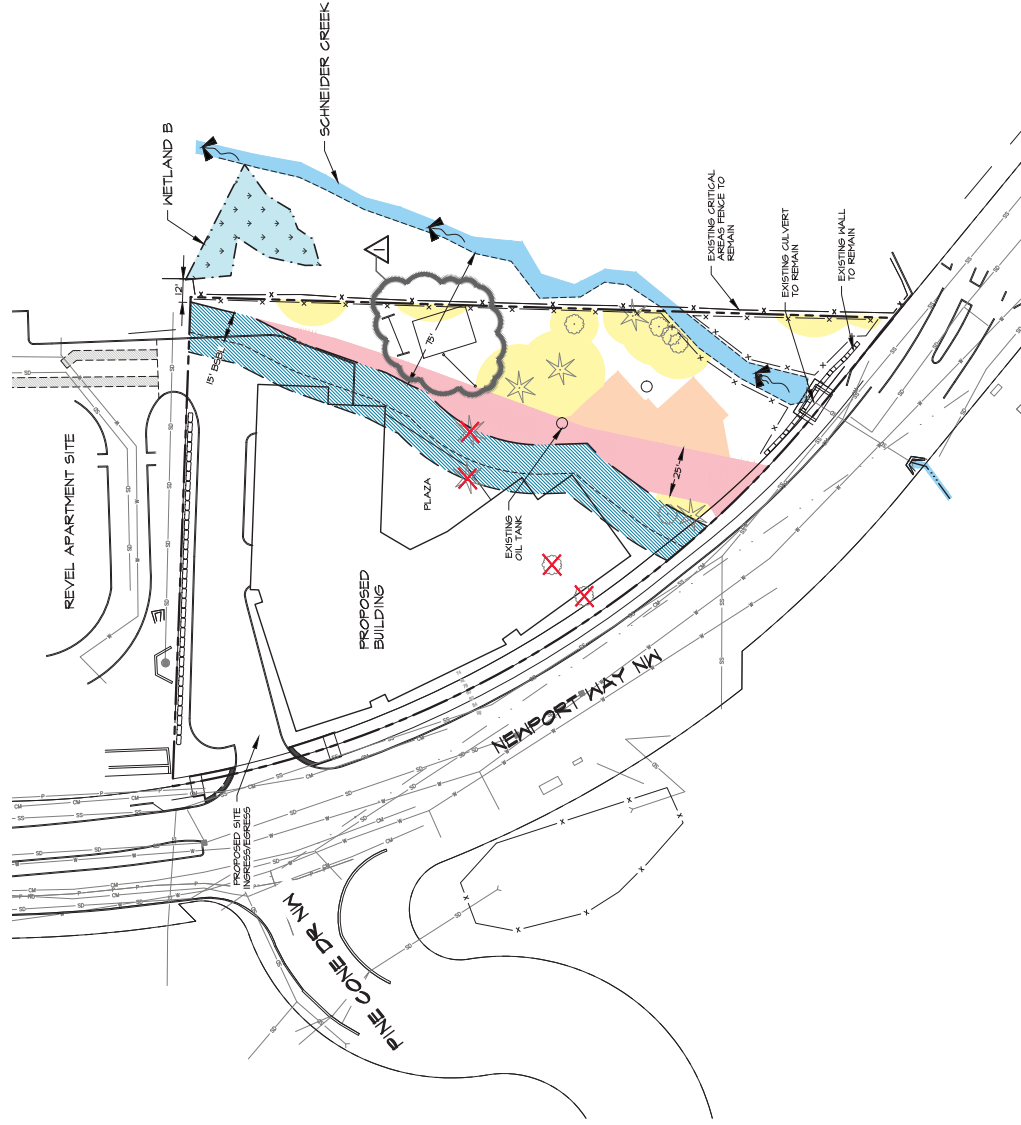
1. SURVEY PROVIDED BY CORE DESIGN, 12100 NE 19TH ST, SUITE 300, BETHELL, WA 98011, (425) 695-1871.
2. SITE PLAN PROVIDED BY CORE DESIGN, 12100 NE 19TH ST, SUITE 300, (425) 695-1871.
3. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
4. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN JUNE 2021.



EXISTING TREE CANOPY WITH MOWN GRASS LAWN UNDER STORY	6,976 SF
EXISTING MOWN GRASS LAWN AREAS	13,220 SF
EXISTING HUMAN DEVELOPMENT (MOBILE & AERIAL DELIVERY)	5,147 SF



SN 1/4 SECT. 20, T4NSP. 24N, RANGE 06E, WM.



PROPOSED SITE PLAN & IMPACTS OVERVIEW PLAN

**PLAN LEGEND**

- PROPERTY LINE
- EXISTING WETLAND
- STREAM ORDINARY HIGH WATER MARK (CHHH)
- STREAM BUFFER - STANDARD
- STREAM BUFFER - REDUCED
- PROPOSED 15-FT BUILDING SET BACK LIMITS (BSBL)
- PROPOSED 2-FT CONTOURS
- EXISTING TREES
- EXISTING TREES TO BE REMOVED

**IMPACTS LEGEND**

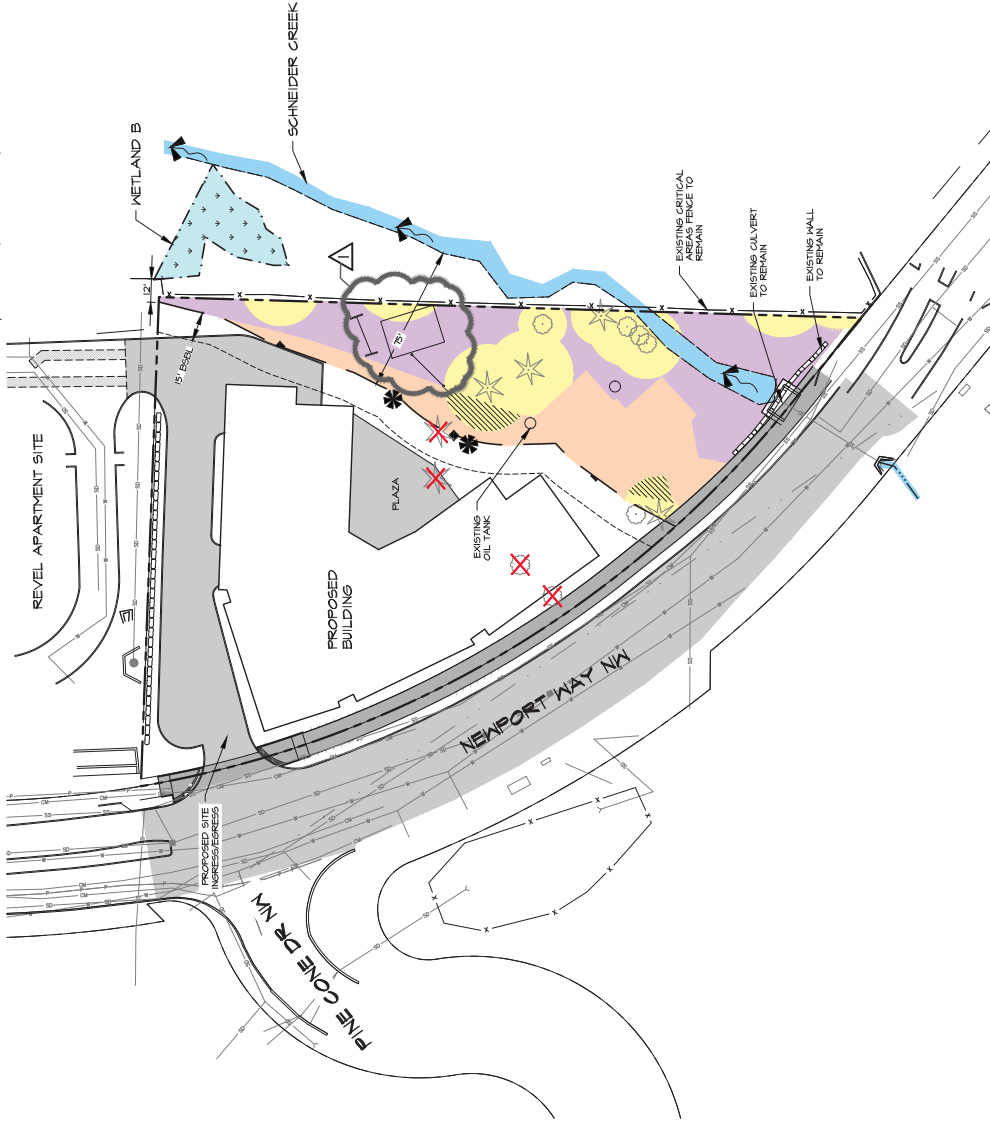
- TEMPORARY CONSTRUCTION FOR 3,966 SF
- BUFFER RESTORATION 1,044 SF
- FIRE ACCESS IMPACT

**NOTES**

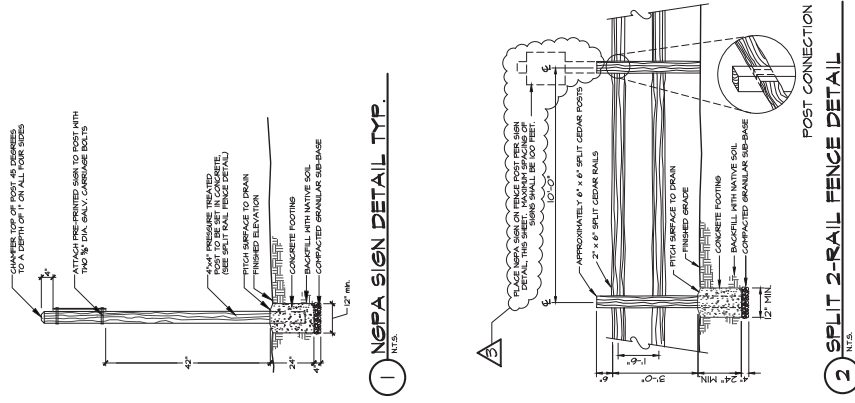
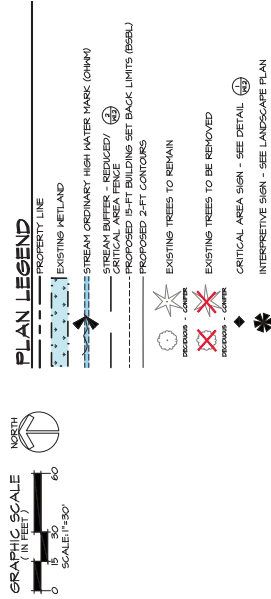
1. DRAFT PREPARED BY CORE DESIGN, 1200 NE 18TH ST, SUITE 300, BOYD, WA 98003, (425) 845-7971, MODIFIED BY CORE DESIGN, 1200 NE 18TH ST, SUITE 300, (425) 845-7971. SOURCE DRAWING WAS MODIFIED BY ENHANCER. ENHANCER CONSULTANTS FOR VISUAL IMPACT ANALYSIS TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN JUNE 2021.



SN 1/4 SECT. 20, T4NSP. 24N, RANGE 06E, WM.



### PROPOSED SITE PLAN & MITIGATION OVERVIEW PLAN



- NOTES**
1. SURVEY PROVIDED BY CORE DESIGN 1200 NE 142ND AVE, PORTLAND, OR 97230. (425) 885-1971.
  2. THE EXISTING SITE IS A 100' X 100' LOT. THE EXISTING SITE IS A 100' X 100' LOT. THE EXISTING SITE IS A 100' X 100' LOT.
  3. SOURCE DRAWING WAS MODIFIED BY TALASAKA CONSULTANTS FOR VISUAL ENHANCEMENT.
  4. THIS PLAN IS AN ATTACHMENT TO THE EXISTING SITE PLAN AND WAS PROVIDED BY TALASAKA CONSULTANTS IN JUNE 2021.





SW 1/4 SECT. 20, T19N, R10E, S10E, W1/2

## PLANT SCHEDULE

### LARGE TREES

SCIENTIFIC NAME	COMMON NAME	W.L.	STATUS	AREA 1	AREA 2	AREA 3	SPACING	SIZE (MIN)	NOTES
ACER MACROPHYLLUM	BIG LEAF MAPLE	FACU	-	1	-	-	AS SHOWN	5-6' HT.	SINGLE TRUNK, WELL BRANCHED
BETULA PAPERIFERA	PAPER BIRCH	FACU	-	1	-	-	AS SHOWN	5-6' HT.	SINGLE TRUNK, WELL BRANCHED
PRUNUS BACCATA	BITTERCHERRY	FACU	-	1	-	-	AS SHOWN	5-6' HT.	SINGLE TRUNK, WELL BRANCHED
DOUGLAS FIR	DOUGLAS FIR	FACU	-	22	-	-	AS SHOWN	4-5' HT.	DBH FULL & BUSHY
THUJA PLICATA	WESTERN RED CEDAR	FACU	-	42	-	-	AS SHOWN	4-5' HT.	DBH FULL & BUSHY

### SMALL TREES/LARGE SHRUBS

SCIENTIFIC NAME	COMMON NAME	W.L.	STATUS	AREA 1	AREA 2	AREA 3	SPACING	SIZE (MIN)	NOTES
ACER GLABRUM	VINE MAPLE	FACU	-	1	12	-	AS SHOWN	24" HT.	SINGLE TRUNK, WELL BRANCHED
AMELANCHIER ALNIFOLIA	SERVICEBERRY	FACU	-	1	-	5' O.C.	AS SHOWN	24" HT.	MULTI-CANE (8 MIN)
CORYLUS CORNUTA	WINTER HAZELNUT	FACU	-	-	19	-	AS SHOWN	4-5' HT.	SINGLE TRUNK, WELL BRANCHED
GRATISIA DOUGLASSII	BLACK HAWTHORN	FACU	-	-	42	5' O.C.	AS SHOWN	24" HT.	MULTI-CANE (8 MIN)
GEALEDIA CERCIFORIS	INDIAN PLUM	FACU	-	35	36	5' O.C.	AS SHOWN	24" HT.	MULTI-CANE (8 MIN)
SALIX SCOLERIANA	SCOLLER HILLON	FACU	-	34	-	3' O.C.	AS SHOWN	4' O.C.	4' O.C. MIN. BARK
SAMBUCUS RACEMOSA	RED ELDERBERRY	FACU	-	13	6	5' O.C.	AS SHOWN	24" HT.	MULTI-CANE (8 MIN)

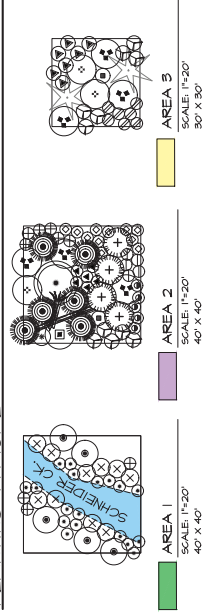
### MASSING SHRUBS

SCIENTIFIC NAME	COMMON NAME	W.L.	STATUS	AREA 1	AREA 2	AREA 3	SPACING	SIZE (MIN)	NOTES
CORNUS ALBA	RED-OSIER DOGWOOD	FACU	-	35	-	4' O.C.	1 GAL	1 GAL	MULTI-CANE (8 MIN)
LONGERA INVOLUTATA	BLACK THIM-BERRY	FACU	-	42	-	4' O.C.	1 GAL	1 GAL	MULTI-CANE (8 MIN)
ROSA WICKIANA	NOOTKA ROSE	FACU	-	36	-	4' O.C.	1 GAL	1 GAL	MULTI-CANE (8 MIN)
ROSA PROCARPA	CLUSTERED WILD ROSE	FACU	-	11	-	4' O.C.	1 GAL	1 GAL	MULTI-CANE (8 MIN)
RUBUS PARVIFLORUS	THIM-BERRY	FACU	-	35	-	4' O.C.	1 GAL	1 GAL	FULL & BUSHY
RUBUS SPECIOSUS	SALMONBERRY	FACU	-	42	-	4' O.C.	1 GAL	1 GAL	FULL & BUSHY
SYMPLOCARPA ALBIS	COMMON SNOKBERRY	FACU	-	30	-	4' O.C.	1 GAL	1 GAL	MULTI-CANE (8 MIN)

### GROUND COVER

SCIENTIFIC NAME	COMMON NAME	W.L.	STATUS	AREA 1	AREA 2	AREA 3	SPACING	SIZE (MIN)	NOTES
GALLIOTERIA SHALON	SALAL	FACU	-	148	615	22" O.C.	1 GAL	1 GAL	FULL & BUSHY
POLYSTICHUM NITIDUM	SHORE FERN	FACU	-	148	615	22" O.C.	1 GAL	1 GAL	FULL & BUSHY

## PLANTING TYPICAL



## PLANTING DENSITY TABLE

REQUIRED	PROPOSED
TREE PLANTING AREA	TREE PLANTING AREA
17,450 SF	17,450 SF
TOTAL PLANTED AREA	TOTAL PLANTED AREA
17,450 SF	17,450 SF
TREES @ 0.01	141
SHRUBS @ 0.01	450
GROUND COVER @ 0.01	4,500

## PLANTING AREAS

### PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND
- STREAM BUFFER - REDUCED
- BUILDING SET BACK LIMIT (ESBL) - 15 FT
- EXISTING TREES TO REMAIN
- PROPOSED CRITICAL AREA PERCE

GRAPHIC SCALE (IN FEET)

SCALE 1"=20'

STUMP - SEE DETAIL

MOODY CREEK (DOWN LOGS)

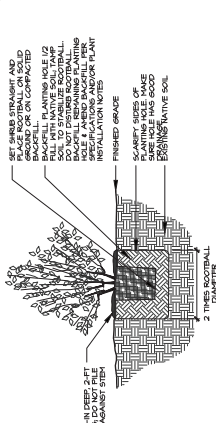
WETLAND B

PLAZA

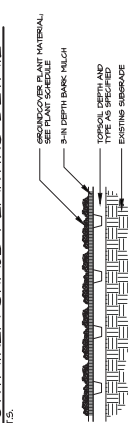
PROPOSED BUILDING

EXISTING CULVERT TO REMAIN

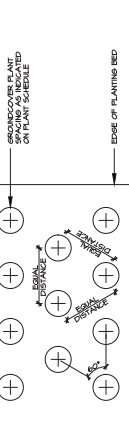
SCNEIDER CREEK



## 2 CONTAINER SHRUB PLANTING DETAIL



## 3 GROUND COVER INSTALLATION DETAIL



## 4 B&B CONIFER TREE PLANTING DETAIL



## NOTES

1. SURVEY PROVIDED BY CORE DESIGN, 1200 NE 142ND AVE, SUITE 100, BOVILL, WA 98001, (425) 885-1571.
2. SITE PLAN PROVIDED BY CORE DESIGN, 1200 NE 142ND AVE, SUITE 100, BOVILL, WA 98001, (425) 885-1571.
3. SOURCE DRAWING WAS MODIFIED BY TALAUSA CONSULTANTS IN JUNE 2021.
4. THIS PLAN IS AN ATTACHMENT TO THE TALAUSA CONSULTANTS IN JUNE 2021.

Know what's below. Call before you dig.

811

Project # 206

Sheet # 13.0

Revisions

By

Date

6-27-2021

6-27-2021

6-27-2021

6-27-2021

6-27-2021

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